

TABLE AND CHARTS OF
EQUILIBRIUM NORMAL-SHOCK
AND SHOCK-TUBE PROPERTIES
FOR PURE CARBON DIOXIDE
WITH VELOCITIES FROM
1 TO 16 km/sec

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PREFACE

Equilibrium thermodynamic and flow properties are presented in tabulated and graphical form for moving, standing, and reflected normal shock waves in pure CO_2 . Properties include pressure, temperature, density, enthalpy, speed of sound, entropy, molecular weight ratio, isentropic exponent, velocity, and species mole fractions. Incident (moving) shock velocities are varied from 1 to 16 km/sec for a range of initial pressure of 5 N/m² to 500 kN/m². The present results are applicable to shock-tube flows and to free-flight conditions for a blunt body at high velocities. Working charts illustrating idealized shock-tube performance with CO_2 test gas and heated helium and hydrogen driver gases are also presented.

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INTRODUCTION

The shock tube has been widely used to generate high-velocity flows for research in chemical kinetics and radiation gas dynamics. An attractive capability of the shock tube is that real-gas conditions in the region behind a detached bow shock of an entry vehicle can be simulated for arbitrary test gases. During the last decade or so, this capability was utilized as interest expanded from Earth entry probes to Martian probes. In the early design of Martian probes, a number of atmospheric models were proposed (ref. 1), which included a range of thermodynamic properties and composition. These models were updated as additional information on atmospheric properties was obtained. Similarly, expansion of interest in entry probes to Venus also ushered in a number of proposed atmospheres for this planet. As the atmospheric models for Venus (ref. 2) were updated, it became apparent that the atmosphere consisted essentially of CO_2 (ref. 3). Hence, studies with pure CO_2 were undertaken in the arc-driven Langley 6-inch shock tube (ref. 4). In one such study (ref. 5), incident shock velocities representative of expected entry velocities into the atmosphere of Venus were generated. The initiation of these studies demonstrated the need for a method of estimating shock-tube performance prior to a test because the wide range of flow conditions and very short test times impose stringent requirements on shock-tube instrumentation. In order to prepare properly facility instrumentation for a test, the investigator must have reasonable estimates of the magnitude of the flow quantities to be measured.

Equilibrium thermodynamic and flow properties for normal shock waves in pure CO_2 are calculated by using the program of reference 6. The purpose of the present report is threefold: (1) To present charts and tables of thermodynamic properties, flow velocity, and species mole fractions for incident (moving), standing,

and reflected normal shocks in pure CO_2 ; (2) to provide reasonable estimates of shock-tube performance with CO_2 while using idealized shock-tube theory (ref. 6) for helium and hydrogen driver gases; and (3) to provide a convenient means of determining post-normal-shock flow conditions for planetary-entry, flow-field studies. The tabulations of species mole fractions should be useful in determining post-normal-shock radiative properties.

It should be noted that charts for equilibrium normal-shock waves in CO_2 are included in reference 7 for the same range of incident shock velocity considered herein. The results of reference 7 were based on thermodynamic properties of reference 8. In the present study, the 10 species used in reference 7 (e^- , C , C^+ , C^{++} , O , O^+ , O^{++} , O_2 , CO , and CO_2) were supplemented by six additional species (O^- , O_2^+ , O_2^- , C^- , C_2 , and CO^+). These additional species are trace species and their inclusion should have little effect on calculated thermodynamic properties but may have a significant influence on calculated mole fractions. The negative ions and particularly C_2 and CO^+ are important as radiating species. Hence, the present results are believed to provide more accurate and detailed mole fractions for CO_2 than reference 7. Also, provision of tables as well as charts is a worthwhile convenience, particularly in regions where curves on the charts may overlap.

SYMBOLS

a	speed of sound, m/sec
h	specific enthalpy, J/kg
p	pressure, N/m^2
R	universal gas constant, 8.31434 kJ/kmol-K
s_{W_0}/R	nondimensional specific entropy

T temperature, K
 U velocity, m/sec
 U_r velocity of reflected shock, m/sec
 U_s velocity of incident shock, m/sec
 W molecular weight, kg/kmol
 W_o molecular weight of undissociated CO₂, kg/kmol
 Z kmole of dissociated CO₂ per kmole of undissociated CO₂, W_o/W
 γ_E isentropic exponent, $\left(\frac{\partial \log p}{\partial \log \rho} \right)_{SW_o/R}$
 ρ density, kg/m³

Subscripts:

1 state of quiescent test gas ahead of incident normal shock
 2 state of test gas behind incident normal shock (see fig. 1)
 2r state of test gas behind reflected normal shock into region ② (see fig. 1)

2s state of test gas behind standing normal shock in region ② (see fig. 1)

4 driver-gas conditions at time of diaphragm rupture

CONVERSION FACTORS AND CONSTANTS

Conversion factors between the International System of Units (SI) and U.S. Customary Units (ref. 9) for the quantities presented in table I and figures 2 to 5 are as follows:

$$1 \text{ N/m}^2 = 9.8692 \times 10^{-6} \text{ atm} = 1.4504 \times 10^{-4} \text{ psi} = 2.0885 \times 10^{-2} \text{ lbf/ft}^2$$

$$1 \text{ kg/m}^3 = 6.2428 \times 10^{-2} \text{ lbm/ft}^3 = 1.9403 \times 10^{-3} \text{ slug/ft}^3$$

$$1 \text{ J/kg} = 1 \text{ m}^2/\text{sec}^2 = 10.764 \text{ ft}^2/\text{sec}^2 = 4.3021 \times 10^{-4} \text{ Btu/lbm}$$

$$1 \text{ m/sec} = 3.2808 \text{ ft/sec} = 2.2369 \text{ mph}$$

Physical constants appearing herein for CO_2 at $T_1 = 300 \text{ K}$ are as follows:

$$W_0 = 44.011 \text{ kg/kmol}$$

$$h_1 = -8.718 \text{ MJ/kg}$$

$$a_1 = 270.2 \text{ m/sec}$$

$$\gamma_{E,1} = 1.286$$

$$Z_1 = 1.0$$

ANALYSIS AND COMPUTATION PROCEDURE

Shock-Tube Flow Regions

The regions of interest for a shock tube are illustrated in figure 1. The driver gas at time of diaphragm rupture is designated as region ④, and the quiescent test gas is designated as region ① (fig. 1(a)). Upon rupture of the diaphragm, an incident shock wave propagates into region ① with a velocity U_s . The flow conditions immediately behind this shock are denoted as region ② (fig. 1(b)). For a blunt model positioned in the driven section of the shock tube, a standing shock is formed at the model, provided the flow in region ② is supersonic (fig. 1(c)). The flow conditions immediately behind this standing shock are designated as region ②s.

When the incident shock wave reaches the end wall of the shock tube, it is reflected back into region ② (fig. 1(d)). The gas behind the reflected shock is brought to rest, relative to the shock tube. Flow conditions behind this reflected shock, which is propagating upstream with a velocity U_r , are designated as region ②r.

Conservation Relations

For an incident normal shock into region ①, for a laboratory-fixed coordinate system, the conservation relations for mass, momentum, and energy are

$$\left. \begin{aligned} \rho_1 U_s &= \rho_2 (U_s - U_2) \\ p_1 + \rho_1 U_s^2 &= p_2 + \rho_2 (U_s - U_2)^2 \\ h_1 + \frac{1}{2} U_s^2 &= h_2 + \frac{1}{2} (U_s - U_2)^2 \end{aligned} \right\} \quad (1)$$

The conservation relations for a standing normal shock, where the upstream conditions for this shock are the downstream conditions for the incident shock (region ②), are

$$\left. \begin{aligned} \rho_2 U_2 &= \rho_{2s} U_{2s} \\ p_2 + \rho_2 U_2^2 &= p_{2s} + \rho_{2s} U_{2s}^2 \\ h_2 + \frac{1}{2} U_2^2 &= h_{2s} + \frac{1}{2} U_{2s}^2 \end{aligned} \right\} \quad (2)$$

The conservation relations for a reflected normal shock, where the upstream conditions are those of region ②, are

$$\left. \begin{aligned} \rho_2 (U_2 + U_r) &= \rho_{2r} U_r \\ p_2 + \rho_2 (U_2 + U_r)^2 &= p_{2r} + \rho_{2r} U_r^2 \\ h_2 + \frac{1}{2} (U_2 + U_r)^2 &= h_{2r} + \frac{1}{2} U_r^2 \end{aligned} \right\} \quad (3)$$

Thermodynamic Properties

Thermodynamic properties for the real-gas mixtures are determined by the thermochemical equilibrium procedure of references 10 and 11. This procedure, which is based upon the Gibbs free-energy minimization method of reference 12, includes dissociation and first and second ionization. Basic assumptions are as follows:

(1) The mixture is composed of ideal gases (intermolecular force effects are neglected).

(2) For diatomic species the rigid-rotor harmonic-oscillator model is used with vibrational-rotational corrections.

(3) Only electronic levels with principal quantum number less than or equal to 5 are included.

For a given pressure and temperature, the free energies for individual species are computed from partition functions of statistical mechanics. The equilibrium composition is then obtained by minimization of the free energy.

As discussed in reference 11, the present first-order thermodynamic properties (ρ , h , s , and Z) should be accurate to within 1 percent and second-order properties (a and γ_E) to within 5 percent for $T \leq 15\,000\text{ K}$ and $0.7\text{ N/m}^2 \leq p \leq 700\text{ kN/m}^2$. This temperature and pressure range was extensively checked in reference 11 with an air model. Accuracy should decrease somewhat as the temperature and pressure increase beyond the upper limits established in reference 11.

Required inputs to the procedure of references 10 and 11 and an iterative-interpolation scheme enabling determination of thermodynamic properties from combinations of h , p , sw_0/R , and ρ are discussed in reference 6. The species used in the present calculations for CO_2 are e^- , O , O^+ , O^{++} , O^- , O_2 , O_2^+ , O_2^- , C , C^+ , C^{++} , C^- , C_2 , CO , CO^+ , and CO_2 . Thermodynamic data for the CO_2 species are obtained from references 10 and 13, and a listing of the thermodynamic data is presented in reference 14.

Method of Solution

As mentioned previously, the upstream conditions for the standing and reflected shocks are conditions in region ②. Hence, it is necessary to first solve for conditions behind the incident shock. Because thermodynamic properties and gas composition (mole fractions) in region ① are assumed known, as is the incident shock velocity U_s , quantities appearing on the left-hand side of the conservation relations for an incident normal shock (eqs. (1)) are known. The method of successive approximations (iteration on ρ_2 , ref. 6) is used to solve equations (1) for ρ_2 , p_2 , h_2 , and U_2 in conjunction with the source of thermodynamic properties. The iterative procedure is continued until successive values of ρ_2 are within 0.5 percent. Having determined the

conditions in region (2), the corresponding conditions in regions (2s) and (2r) are obtained in a similar manner; that is, by an iterative procedure on density ρ_{2s} and ρ_{2r} , respectively.

The procedure for determining shock-tube performance is discussed in detail in reference 6. This procedure is commonly referred to as simple shock-tube theory since it is based on a simplified one-dimensional, inviscid-flow model which assumes instantaneous diaphragm rupture, no shock-wave attenuation, and a driver section-to-driven section cross-sectional area ratio of unity. Imperfect gas effects in region (4) for helium and hydrogen driver gases are included in reference 6.

DISCUSSION OF TABLE AND CHARTS

Before discussing the present table and charts, it should be noted that flow properties behind the normal portion of the bow shock wave of an entry body at high velocity are equivalent to the properties behind an incident shock in a shock tube. In free flight, the free-stream conditions and flight velocity correspond to the initial conditions in region (1) and shock-wave velocity, respectively, whereas the conditions behind the bow shock correspond to conditions in region (2). In the present study, an initial temperature T_1 of 300 K was used for all calculations. A method permitting use of a range of ambient temperatures is discussed in reference 7 and should prove useful in determining free-flight conditions by using the present table and charts for an incident normal-shock wave.

For determination of free-flight stagnation conditions, it is assumed that the gas is brought to rest by an isentropic compression. Hence, the stagnation enthalpy is equal to the quantity

$$\left(h_2 + \frac{1}{2} U_2^2 \right) \text{ and the stagnation entropy is equal to } s_2. \text{ These}$$

two quantities may be used in conjunction with the tables or charts

of reference 14 to obtain the remaining thermodynamic properties at the stagnation point.

Table

The solutions for incident (moving), standing, and reflected normal shocks are presented in table I for pure CO_2 . These tabulated computer results are arranged in groups of constant pressure in region ① (P_1) and the incident shock velocity (U_{S1}) is varied within the group. In table I, p_1 is varied from 5 N/m^2 to 500 kN/m^2 and U_s is varied, for each p_1 , from 1 to 10 km/sec in increments of 200 m/sec and 10 to 16 km/sec in increments of 500 m/sec.

For each p_1 , a complete list of calculated thermodynamic properties (p , T , ρ , h , a , sw_0/R , Z , and γ_E), flow velocity (U), and species volumetric composition is given for the three shock-tube regions under consideration. The rows in the upper portion of each tabulation, for a given p_1 and U_s , are identified by letters (FORTRAN symbols), the designations of which, in terms of the defined symbols, are given in the following table:

FORTAN symbol	Moving shock	Standing shock	Reflected shock
P	p_2/p_1	p_{2s}/p_1	p_{2r}/p_1
T	T_2/T_1	T_{2s}/T_1	T_{2r}/T_1
RHO	ρ_2/ρ_1	ρ_{2s}/ρ_1	ρ_{2r}/ρ_1
H	h_2/h_1	h_{2s}/h_1	h_{2r}/h_1
A	a_2/a_1	a_{2s}/a_1	a_{2r}/a_1
S	s_2/s_1	s_{2s}/s_1	s_{2r}/s_1
Z	Z_2/Z_1	Z_{2s}/Z_1	Z_{2r}/Z_1
GAME	$\gamma_{E,2}/\gamma_{E,1}$	$\gamma_{E,2s}/\gamma_{E,1}$	$\gamma_{E,2r}/\gamma_{E,1}$
U	U_2/a_1	U_{2s}/a_1	U_r/a_1

The lower portion of each tabulation lists the species composition for moving, standing, and reflected shock regions. Rows are identified by the species symbol.

The conditions in region ① are used to nondimensionalize calculated properties in regions ②, ②s, and ②r. The temperature in region ① T_1 is 300 K for all cases in table I. Corresponding thermodynamic properties for CO_2 in region ①, in SI units (see section "Symbols"), are given in the following table:

INITIAL CONDITIONS AHEAD OF INCIDENT SHOCK IN CO_2

$T_1 = 300 \text{ K}$ $h_1 = -8.718 \text{ MJ/kg}$ $a_1 = 270.2 \text{ m/sec}$ $Z_1 = 1.0$ $\gamma_{E,1} = 1.286$		
$p_1, \text{ N/m}^2$	$\rho_1, \text{ g/m}^3$	$s_1 W_0/R$
5	0.08818	35.662
10	.1764	34.974
20	.3527	34.271
50	.8818	33.361
100	1.764	32.663
200	3.527	31.973
500	8.818	31.053
1 000	17.64	30.362
2 000	35.27	29.673
5 000	88.18	28.752
10 000	176.4	28.063
20 000	352.7	27.362
50 000	881.8	26.453
100 000	1764	25.754
200 000	3527	25.062
500 000	8818	24.143

It is recommended in references 10 and 11 that pressures should be restricted to less than 10 MN/m^2 and temperatures

restricted to less than 15 000 K in order to insure accurate calculations of equilibrium compositions. This recommended upper limit on pressure is to minimize imperfect gas (intermolecular force) effects. Temperatures considered must be such that only negligible contributions are realized from Coulomb interactions and from electronic energy levels past the fifth electron shell. Both these considerations are unaccounted for in the equilibrium program of references 10 and 11. For temperatures below 15 000 K, the latter consideration should be negligible. A comparison made between equilibrium air properties generated by the method of references 10 and 11 with somewhat more rigorous air calculations (ref. 15) demonstrated the properties were in good agreement (within 1 percent) for temperatures to 25 000 K. Now, in the present results of table I, no upper limitations on pressure and temperature are imposed; hence, values of pressure exceeding 10 MN/m^2 and of temperature exceeding 25 000 K are presented for the three shock-tube regions of interest. The user of these tables is cautioned to exercise discretion in employing the present results at pressures exceeding 10 MN/m^2 and temperatures exceeding 25 000 K.

Charts

Working charts for pure CO_2 (corresponding to the results of table I) are shown in figures 2 to 4. In these figures, the non-dimensionalized thermodynamic properties and flow velocity for regions (2), (2s), and (2r) are plotted as a function of incident shock velocity U_s for various quiescent test gas pressures. For each property in each region, the incident shock velocity scale is 0 to 8 km/sec and 8 to 16 km/sec. This division of the U_s scale is to enhance the readability of these charts. It should be noted that the scale (ordinate) for a thermodynamic property or flow velocity often varies between the two ranges of U_s plotted throughout the figures. These charts were generated by machine,

and linear line segments were used to connect adjacent data points.

Unlike table I, maximum pressure and temperature limitations were imposed on the results of figures 2 to 4, these being $p \leq 10 \text{ MN/m}^2$ and $T \leq 25\,000 \text{ K}$; calculated quantities above these limitations are not plotted. Again, the properties in region ① presented previously must be used to obtain the desired value of the thermodynamic property or flow velocity from the ratio presented.

The present results were compared with the results of reference 7 for incident shock velocities from 1 to 16 km/sec and an initial pressure of 100 N/m^2 . With the exception of a few points (3 out of 105), the thermodynamic properties and velocities of reference 7 for regions ②, ②s, and ②r (as read from the charts) were within 2 percent of the present results. Disagreement did not exceed 4 percent. For this range of U_s , the maximum values of T_2 and T_{2s} were approximately 17 000 K and 25 000 K, respectively. As expected, thermodynamic properties were in better agreement between the two studies than were species mole fractions. For example, agreement for individual mole fractions was within 10 to 12 percent in the U_s range (T_2 range) where the mole fraction was near its maximum value. In the U_s range where a species was not a major species, agreement in species mole fractions diminished considerably.

THEORETICAL SHOCK-TUBE PERFORMANCE

Before performing a study in a shock tube, it is essential to ascertain the theoretical performance for the gas being tested. The wide range of flow conditions and very short test times (generally, a few μsec to several msec) impose stringent requirements on shock-tube instrumentation. Thus, in preparing shock-tube instrumentation for a test, it is necessary that the physical quantities to be measured be known to within reasonable limits.

Results from the procedure for determining shock-tube performance for pure CO_2 test gas are shown in figure 5 for helium and hydrogen driver gases. In figure 5, the incident shock velocity is shown as a function of the ratio of driver pressure in region (4) to quiescent test gas pressure in region (1) for various driver gas temperatures T_4 . These results were generated to support research in the Langley 6-inch expansion tube and the arc-driven Langley 6-inch shock tube. Variation in p_4/p_1 is obtained by varying p_1 ; p_4 is equal to 68.95 MN/m^2 , which represents the maximum pressure rating for the expansion tube. The driver gas temperature is varied from 300 K (unheated) to 800 K (fig. 5(a)) and 4000 K to 12 000 K (fig. 5(b)) for helium and from 300 K to 600 K for hydrogen; the quiescent test gas temperature is equal to 300 K. The value $T_4 = 800 \text{ K}$ for helium (fig. 5(a)) is representative of maximum T_4 obtainable with resistance heating (ref. 6) and the highest hydrogen T_4 represents the limit of curve fitting as applied to virial coefficients in reference 6. The results of figures 5(a) and 5(c) were obtained by using a five-species CO_2 model which included dissociation but not ionization. For an arc-driven shock tube using a helium driver gas, much higher driver gas temperatures than illustrated in figure 5(a) are realized. Figure 5(b) represents an extension (in the range of T_4) to figure 5(a). The differences between figures 5(a) and 5(b) are that the 16-species CO_2 model was used for the results of figure 5(b) and the range of T_4 was from 4000 K to 12 000 K. At the maximum T_4 of 12 000 K and p_4 of 68.95 MN/m^2 , ionization of the helium driver gas is essentially negligible (ref. 16), and the results of reference 6 are applicable.

Results at the highest values of p_4/p_1 and T_4 in figure 5(a), hence highest U_s , were compared with results obtained with the 16-species CO_2 model at the same p_4/p_1 and T_4 . This comparison showed a negligible difference between properties obtained with the two CO_2 models at these moderate conditions. Thus, when p_4 , T_4 , and p_1 are known, a theoretical value of U_s may be

obtained from figure 5. Corresponding thermodynamic properties and flow velocity in regions (2), (2s), and (2r) may be obtained from figures 2 to 4 or from table I. However, as discussed in reference 17, discrepancies between real physical conditions and conditions calculated with a simple shock-tube theory are to be expected.

CONCLUDING REMARKS

Equilibrium thermodynamic and flow properties are presented in tabulated and graphical form for moving, standing, and reflected normal shock waves in pure CO_2 . Properties include pressure, temperature, density, enthalpy, speed of sound, entropy, molecular weight ratio, isentropic exponent, velocity, and species mole fractions. Incident (moving) shock velocities are varied from 1 to 16 km/sec for a range of initial pressure of 5 N/m² to 500 kN/m². The present results are applicable to shock-tube flows and to free-flight conditions for a blunt body at high velocities. Working charts illustrating idealized shock-tube performance with CO_2 test gas and heated helium and hydrogen driver gases are also presented.

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TABLE I.- NONDIMENSIONAL THERMODYNAMIC PROPERTIES AND
FLOW VELOCITY FOR INCIDENT (MOVING), STANDING, AND
REFLECTED NORMAL SHOCKS IN PURE CO₂

[User cautioned about using table at pressures
exceeding 10 MN/m² and temperatures exceeding
25 000 K]

$$p_1 = 5 \text{ N/m}^2$$

P1 = 5.00E+00 N/SQ-M, U1 = 1.00E+03 M/SEC

P1 = 5.00E+00 N/SQ-M, U1 = 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+03	3.4570E+03	4.0723E+03
RHO	6.1029E+00	1.9532E+01	2.7601E+01
H	9.4419E+01	9.0798E+01	8.8129E+01
A	1.5478E+00	1.7797E+00	1.9261E+00
S	1.0636E+00	1.0748E+00	1.0911E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E+01	9.1622E+01	9.1101E+01
U	3.0950E+00	9.4609E+01	8.7890E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2172E+02	1.9007E+02
T	3.1957E+03	4.5002E+03	5.2125E+03
RHO	7.1505E+00	2.7950E+01	3.6409E+01
H	9.1903E+01	8.6718E+01	8.2804E+01
A	1.7127E+00	2.0201E+00	2.1595E+00
S	1.0908E+00	1.1081E+00	1.1259E+00
Z	1.0000E+00	1.0001E+00	1.0015E+00
GAME	9.1904E+01	9.0676E+01	8.9322E+01
U	3.8201E+00	1.0092E+00	9.3382E+01

SPECIES	MOLE FRACTIONS		
E-	3.0414E-49	9.0778E-40	3.7064E-31
O	3.7570E-13	2.0827E-10	1.2248E-08
O+	2.0095E-36	1.3379E-32	9.1867E-30
O++	0.	0.	0.
O-	9.3529E-57	2.8456E-46	6.1527E-37
O2	4.3992E-04	4.4003E-04	4.5002E-04
O2+	1.7597E-18	1.7597E-18	1.7594E-18
O2-	3.0357E-51	4.9529E-42	3.9917E-34
C	1.4926E-50	1.3103E-41	1.2565E-33
C+	8.2329E-61	1.8844E-52	4.6022E-45
C++	0.	0.	0.
C-	2.1456E-95	1.9433E-78	1.2578E-62
CO	2.2951E-10	2.1994E-07	7.0234E-05
CO+	3.3246E-25	2.2984E-31	1.5029E-27
CO2	9.9955E-01	9.9956E-01	9.9952E-01
C2	9.1542E-75	7.9480E-62	5.7357E-50

SPECIES	MOLE FRACTIONS		
E-	2.4723E-39	2.2471E-23	8.1306E-20
O	3.0193E-11	5.3791E-08	4.3726E-06
O+	6.9047E-33	7.0062E-31	1.8589E-26
O++	0.	0.	0.
O-	4.9792E-66	2.6220E-28	3.1700E-24
O2	4.3989E-04	5.3748E-04	1.8900E-03
O2+	1.7597E-18	1.7595E-18	1.8285E-18
O2-	4.0126E-42	1.2222E-27	7.3761E-23
C	3.2372E-41	3.2614E-27	1.7493E-24
C+	4.3066E-52	1.2475E-39	2.7808E-37
C++	0.	0.	0.
C-	1.5681E-77	8.5613E-49	7.9308E-43
CO	5.2570E-08	1.5227E-04	2.9059E-03
CO+	4.5651E-31	2.1983E-26	2.5235E-24
CO2	9.9955E-01	9.9927E-01	9.9920E-01
C2	3.5697E-61	1.5439E-40	9.3631E-37

P1 = 5.00E+00 N/SQ-M, U1 = 1.40E+03 M/SEC

P1 = 5.00E+00 N/SQ-M, U1 = 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1279E+01	1.9537E+02	2.8948E+02
T	3.8891E+03	5.5799E+03	6.1808E+03
RHO	8.0421E+00	3.4888E+01	4.6253E+01
H	8.8932E+01	8.0767E+01	7.6676E+01
A	1.8837E+00	2.2222E+00	2.3261E+00
S	1.1183E+00	1.1414E+00	1.1602E+00
Z	1.0000E+00	1.0039E+00	1.0130E+00
GAME	9.1239E+01	8.9173E+01	8.6430E+01
U	4.5382E+00	1.0469E+00	9.5549E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1036E+01	2.9201E+02	4.1089E+02
T	4.6505E+03	6.4315E+03	6.8747E+03
RHO	8.8207E+00	4.4493E+01	5.7557E+01
H	8.5507E+01	7.4417E+01	6.9782E+01
A	2.0495E+00	2.3721E+00	2.4637E+00
S	1.1453E+00	1.1755E+00	1.1956E+00
Z	1.0003E+00	1.0205E+00	1.0383E+00
GAME	9.0782E+01	8.5731E+01	8.5029E+01
U	5.2506E+00	1.0626E+00	9.5054E+01

SPECIES	MOLE FRACTIONS		
E-	2.9319E-32	1.0691E-17	3.5611E-16
O	7.2251E-09	1.9782E-05	1.8424E-04
O+	2.9719E-30	5.3542E-24	2.4476E-21
O++	0.	0.	2.1683E-20
O-	2.4051E-28	2.1757E-21	3.8281E-19
O2	4.4524E-04	4.3077E-03	1.3065E-02
O2+	1.7597E-18	8.9561E-18	3.5578E-16
O2-	1.2744E-35	1.5985E-20	1.0736E-18
C	1.2972E-34	1.2156E-21	3.4967E-19
C+	5.5701E-46	2.5508E-33	1.6211E-29
C++	0.	8.2415E-82	3.8636E-73
C-	1.5091E-64	7.2116E-38	9.6243E-34
CO	1.0554E-05	7.7888E-03	2.5446E-02
CO+	3.8640E-28	2.1445E-22	4.5365E-20
CO2	9.9954E-01	9.8791E-01	9.6130E-01
C2	1.9887E-51	1.0940E-32	3.6883E-29

SPECIES	MOLE FRACTIONS		
E-	7.8713E-22	1.9726E-15	3.0014E-14
O	4.4309E-07	4.4830E-04	1.4120E-03
O+	9.6666E-28	9.1885E-23	8.7212E-20
O++	0.	1.1971E-89	3.4649E-87
O-	8.7842E-27	4.0222E-19	1.8688E-17
O2	7.8809E-04	2.0101E-02	3.9077E-02
O2+	1.7593E-18	1.9784E-15	3.0119E-14
O2-	2.0590E-25	7.7263E-18	8.5660E-17
C	2.5960E-26	1.5041E-19	1.4075E-17
C+	2.9803E-35	1.3994E-29	7.6157E-28
C++	0.	1.4378E-72	2.0829E-70
C-	1.3603E-46	9.7127E-34	6.2312E-32
CO	6.9710E-04	3.9788E-02	7.2378E-02
CO+	2.2161E-25	3.2068E-20	1.8753E-18
CO2	9.9851E-01	9.9366E-01	8.9020E-01
C2	2.1504E-35	2.3815E-29	1.9385E-27

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 1.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.221E+01	5.192E+02	5.662E+02
T	5.396E+00	7.062E+00	7.417E+00
RHO	9.639E+00	5.648E+01	7.078E+01
H	9.151E+01	5.712E+01	5.199E+01
A	2.184E+00	2.008E+00	2.592E+00
S	1.171E+00	1.211E+00	1.232E+00
Z	1.023E+00	1.027E+00	1.074E+00
GAME	8.879E+01	8.479E+01	8.468E+01
U	5.973E+00	1.020E+00	9.295E+01

SPECIES ----- MOLE FRACTIONS -----

E-	1.275E-19	7.455E-14	4.280E-13
O	2.320E-02	2.356E-02	4.827E-03
O+	1.067E-25	1.467E-19	4.206E-18
O++		5.297E-22	2.451E-80
O-	2.962E-22	4.853E-17	5.613E-16
O2	4.222E-02	4.627E-02	6.517E-12
O2+	3.027E-18	7.492E-14	4.402E-13
O2-	4.406E-22	2.245E-16	1.724E-15
C	1.892E-22	3.258E-17	5.400E-16
C+	2.927E-34	6.845E-27	1.590E-25
C++	6.226E-09	7.707E-66	7.216E-65
C-	7.898E-42	8.523E-21	2.179E-29
CO	7.511E-03	9.407E-02	1.342E-01
CO+	7.842E-24	4.526E-18	6.108E-17
CO2	5.881E-01	8.572E-01	7.956E-01
C2	4.817E-34	5.457E-27	3.048E-25

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 2.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.915E+01	8.137E+02	1.035E+03
T	6.460E+00	8.057E+00	8.351E+00
RHO	1.185E+01	8.831E+01	1.054E+02
H	7.244E+01	4.952E+01	4.328E+01
A	2.379E+00	2.788E+00	2.882E+00
S	1.226E+00	1.290E+00	1.316E+00
Z	1.033E+00	1.140E+00	1.175E+00
GAME	8.485E+01	8.459E+01	8.472E+01
U	7.454E+00	1.000E+00	9.438E+01

SPECIES ----- MOLE FRACTIONS -----

E-	6.788E-15	4.439E-12	1.676E-11
O	1.158E-02	1.591E-02	2.329E-02
O+	1.102E-20	2.562E-16	8.258E-16
O++	6.521E-91	5.454E-72	2.390E-69
O-	1.350E-18	1.721E-14	5.785E-14
O2	3.144E-02	1.081E-01	1.262E-01
O2+	6.797E-15	6.486E-12	1.691E-11
O2-	5.517E-18	3.257E-14	9.952E-14
C	1.364E-18	2.352E-14	7.957E-14
C+	3.023E-29	5.211E-23	8.835E-23
C++	1.915E-72	6.658E-59	5.427E-56
C-	6.237E-34	1.137E-26	2.594E-26
CO	6.319E-02	2.309E+01	2.749E+01
CO+	2.121E-19	2.211E-15	7.223E-15
CO2	9.042E-01	6.454E+01	5.755E+01
C2	3.578E-29	4.497E-23	2.432E-22

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 2.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.492E+01	5.858E+02	7.688E+02
T	6.002E+00	7.878E+00	7.892E+00
RHO	1.066E+01	7.122E+01	8.685E+01
H	7.724E+01	5.894E+01	5.215E+01
A	2.287E+00	2.645E+00	2.734E+00
S	1.158E+00	1.249E+00	1.273E+00
Z	1.014E+00	1.091E+00	1.120E+00
GAME	8.597E+01	8.453E+01	8.457E+01
U	6.704E+00	1.005E+00	9.376E+01

SPECIES ----- MOLE FRACTIONS -----

E-	3.2P7E-14	9.996E-13	2.238E-12
O	2.618E-04	6.982E-02	1.148E-02
O+	1.492E-22	1.569E-17	7.456E-17
O++	2.010E-98	2.166E-78	5.321E-74
O-	3.106E-20	1.587E-15	7.094E-15
O2	1.462E-02	7.695E-02	9.447E-02
O2+	3.306E-16	1.001E-12	2.261E-12
O2-	1.977E-19	4.097E-15	1.615E-14
C	2.417E-20	1.749E-15	8.151E-15
C+	9.094E-32	1.002E-24	5.239E-24
C++	1.760E-79	3.145E-63	7.934E-60
C-	1.127E-34	1.536E-28	9.901E-28
CO	2.865E-02	1.600E-01	2.038E-01
CO+	4.517E-21	1.856E-16	8.200E-16
CO2	9.564E-01	7.559E-01	6.880E-01
C2	1.516E-71	1.609E-24	1.097E-23

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 2.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.483E+01	1.093E+03	1.368E+03
T	6.828E+00	8.501E+00	8.792E+00
RHO	1.213E+01	1.073E+02	1.255E+02
H	6.715E+01	5.936E+01	3.237E+01
A	2.468E+00	2.938E+00	3.041E+00
S	1.255E+00	1.334E+00	1.361E+00
Z	1.058E+00	1.157E+00	1.227E+00
GAME	9.438E+01	9.479E+01	8.499E+01
U	8.204E+00	1.004E+00	9.602E+01

SPECIES ----- MOLE FRACTIONS -----

E-	4.951E-14	2.986E-11	6.920E-11
O	3.200E-02	2.921E-02	4.116E-02
O+	2.689E-20	2.596E-15	7.211E-15
O++	8.612E-84	5.997E-69	1.692E-65
O-	1.291E-17	1.209E-13	2.451E-13
O2	5.202E-02	1.362E-01	1.712E-01
O2+	4.958E-16	3.014E-11	6.975E-11
O2-	4.964E-17	1.742E-13	4.958E-13
C	1.018E-17	2.036E-13	5.903E-13
C+	4.442E-27	1.213E-21	1.421E-21
C++	1.398E-67	1.203E-55	8.009E-52
C-	1.656E-31	3.727E-25	7.295E-25
CO	1.064E-01	2.092E-01	3.429E-01
CO+	1.764E-18	1.720E-14	4.884E-14
CO2	8.383E-01	5.336E-01	4.642E-01
C2	2.087E-27	1.354E-21	4.152E-21

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

P1 = 5.00E+00 N/SC-M, US1 = 2.40E+03 M/SEC

P1 = 5.00E+00 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1192E+02	1.4284E+02	1.7601E+02
T	7.1483E+00	8.9229E+00	9.2218E+00
RHO	1.4358E+01	1.2667E+02	1.4583E+02
H	6.1419E-01	2.8295E-01	2.0513E-01
A	2.5581E+00	3.0575E+00	3.2057E+00
S	1.2857E+00	1.3800E+00	1.4094E+00
Z	1.0875E+00	1.2620E+00	1.3075E+00
GAME	8.4176E-01	8.5096E-01	8.5249E-01
U	8.9520E+00	1.0188E+00	9.7990E-01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3041E+02	1.8223E+03	2.2231E+03
T	7.4307E+00	9.3669E+00	9.6812E+00
RHO	1.5649E+01	1.4589E+02	1.6584E+02
H	5.5222E-01	1.6289E-01	7.6416E-02
A	2.6482E+00	3.2670E+00	3.3911E+00
S	1.3176E+00	1.4278E+00	1.4593E+00
Z	1.1215E+00	1.3323E+00	1.3847E+00
GAME	8.4150E-01	8.5470E-01	8.5779E-01
U	9.6983E+00	1.0418E+00	1.0086E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.1421E-13	1.1292E-10	2.4100E-10
O	6.8501E-03	4.9473E-02	6.6794E-02
O+	2.9743E-18	2.0438E-14	5.1433E-14
O++	5.1219E-83	1.6813E-65	4.0830E-62
O-	1.6975E-16	6.4381E-12	1.6726E-12
O2	7.4003E-02	1.5850E-01	1.6872E-01
O2+	3.1472E-13	1.1414E-10	2.4400E-10
O2-	3.7163E-14	1.0781E-13	1.4523E-12
C	2.5334E-16	1.3688E-12	3.5902E-12
C+	5.6964E-26	2.4725E-20	2.4640E-20
C++	8.1546E-67	9.4274E-53	4.9539E-50
C-	2.1445E-30	8.1578E-24	1.7368E-22
CO	1.5405E-01	3.6578E-01	4.0356E-01
CO+	3.0840E-17	1.0658E-12	2.7286E-13
CO2	7.6510E-01	4.2624E-01	3.6093E-01
C2	4.4381E-24	2.0121E-20	5.5703E-20

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1475E-12	3.6818E-10	7.5256E-10
O	1.2517E-02	7.7752E-02	1.0189E-01
O+	1.7827E-17	1.3130E-13	3.2609E-12
O++	3.3774E-78	1.4421E-62	4.9234E-59
O-	8.4170E-16	2.7716E-12	6.7568E-12
O2	9.6249E-02	1.7254E-01	1.7625E-01
O2+	1.1457E-12	3.7260E-10	7.6262E-10
O2-	1.5269E-15	2.3284E-12	4.9880E-12
C	1.3977E-15	7.6931E-12	1.9280E-11
C+	4.6529E-25	3.4012E-19	4.2159E-19
C++	4.1258E-43	2.7255E-50	1.8003E-47
C-	2.0299E-29	1.2433E-22	3.2309E-22
CO	2.0423E-01	4.2218E-01	4.5276E-01
CO+	1.5919E-14	5.4865E-13	1.3594E-12
CO2	4.8703E-01	3.2753E-01	2.6810E-01
C2	3.8499E-25	2.2351E-19	6.3034E-19

P1 = 5.00E+00 N/SQ-M, US1 = 3.00E+03 M/SEC

P1 = 5.00E+00 N/SC-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5228E+02	2.2716E+02	2.7513E+02
T	7.6959E+00	9.0077E+00	1.0148E+01
RHO	1.6840E+01	1.4411E+02	1.8454E+02
H	4.8544E-01	2.9562E-02	-6.2377E-02
A	2.7410E+00	3.4481E+00	3.5868E+00
S	1.2510E+00	1.4772E+00	1.5112E+00
Z	1.1595E+00	1.4111E+00	1.4693E+00
GAME	8.4195E-01	8.5912E-01	8.6281E-01
U	1.0441E+01	1.0728E+00	1.0441E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7152E+02	2.7771E+03	3.3476E+03
T	7.9459E+00	1.0265E+01	1.0644E+01
RHO	1.7970E+01	1.8093E+02	2.0150E+02
H	4.1457E-01	-1.0384E-01	-2.1135E-01
A	2.9369E+00	3.6422E+00	3.7990E+00
S	1.2878E+00	1.5283E+00	1.5647E+00
Z	1.2013E+00	1.4954E+00	1.5609E+00
GAME	8.4312E-01	8.6420E-01	8.6868E-01
U	1.1182E+01	1.1119E+00	1.0927E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.7245E-12	1.0632E-09	2.1521E-09
O	2.0664E-02	1.5375E-01	1.4761E-01
O+	1.1734E-14	7.0043E-12	1.9047E-12
O++	5.6274E-77	5.2178E-60	3.6466E-56
O-	2.7642E-15	9.9677E-12	2.3606E-11
O2	1.1727E-01	1.7428E-01	1.7205E-01
O2+	3.7327E-12	1.0765E-09	2.1813E-09
O2-	5.3124E-15	6.4121E-12	1.2747E-11
C	7.6547E-15	3.5773E-11	9.5279E-11
C+	8.9267E-24	3.5315E-18	6.8278E-18
C++	7.3397E-62	3.8862E-48	4.5943E-45
C-	4.8557E-28	1.3631E-21	4.7547E-21
CO	2.5444E-01	4.6732E-01	4.9111E-01
CO+	7.9676E-14	2.4198E-12	6.2351E-12
CO2	6.0742E-01	2.4103E-01	1.8923E-01
C2	4.9269E-24	1.9127E-18	6.2846E-18

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.9128E-12	2.7696E-09	5.7564E-09
O	3.1757E-02	1.6321E-01	2.0406E-01
O+	4.8122E-16	2.4419E-12	1.0633E-11
O++	5.9278E-72	2.1996E-54	1.9076E-52
O-	1.2605E-14	3.1048E-11	7.2702E-11
O2	1.3618E-01	1.6824E-01	1.5556E-01
O2+	9.9270E-12	2.8052E-09	5.8185E-09
O2-	1.4528E-14	1.5253E-11	2.7810E-11
C	2.8940E-14	1.2625E-10	4.5302E-10
C+	5.1082E-23	2.5961E-17	1.0614E-16
C++	8.1156E-59	1.5962E-43	9.2303E-43
C-	3.2023E-27	2.3394E-21	5.9405E-20
CO	3.0339E-01	4.5931E-01	5.1461E-01
CO+	2.8469E-15	8.3243E-12	2.7744E-11
CO2	5.2867E-01	1.6914E-01	1.2577E-01
C2	2.8007E-23	4.8437E-18	5.9078E-17

TABLE I.- Continued

$$p_1 = 5. N/m^2$$

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_1 = 3.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9412E+02	3.3320E+03	4.0068E+03
T	8.1904E+00	1.0750E+01	1.1184E+01
RHO	1.9008E+01	1.9553E+02	2.1591E+02
M	3.3888E-01	2.5038E-01	3.7075E-01
A	2.9368E+00	3.8514E+00	4.0318E+00
S	1.4220E+00	1.5806E+00	1.6198E+00
Z	1.2467E+00	1.5859E+00	1.6594E+00
GAME	8.4462E-01	8.7012E-01	8.7591E-01
U	1.1919E+01	1.1600E+00	1.1494E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.5111E-11	7.6710E-09	1.4664E-08
O	4.4295E-02	2.2043E-01	2.4573E-01
O+	2.2371E-15	1.4701E-11	5.9563E-11
O++	8.0205E-72	1.5657E-52	7.3051E-51
O-	4.0169E-14	8.9126E-11	1.9990E-10
O2	1.5197E-01	1.4925E-01	1.2788E-01
O2+	2.5174E-11	7.1393E-09	1.4730E-09
O2-	3.7882E-14	3.0910E-11	5.1514E-11
C	1.1441E-13	6.0992E-10	2.1984E-09
C+	5.6339E-22	8.0220E-17	1.8288E-15
C++	1.2086E-57	6.0582E-42	1.4930E-40
C-	3.7576E-26	8.1305E-20	6.8818E-19
CO	3.4954E-01	5.1837E-01	5.2495E-01
CO+	1.0454E-14	3.7041E-11	1.2576E-10
CO2	4.4220E-01	1.1195E-01	7.7436E-02
C2	2.1507E-22	7.8315E-17	5.7838E-16

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_1 = 3.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4341E+02	4.5844E+03	5.5170E+03
T	8.6597E+00	1.1890E+01	1.2428E+01
RHO	2.0819E+01	2.1640E+02	2.3360E+02
M	1.7379E-01	5.6956E-01	7.2326E-01
A	3.1497E+00	4.3377E+00	4.6253E+00
S	1.4983E+00	1.6875E+00	1.7222E+00
Z	1.3494E+00	1.7818E+00	1.8702E+00
GAME	8.4856E-01	8.8817E-01	9.0580E-01
U	1.3385E+01	1.2892E+00	1.3097E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.2297E-10	4.2128E-08	1.0330E-07
O	8.7498E-02	3.5416E-01	4.1445E-01
O+	2.8224E-14	5.0453E-10	3.2278E-09
O++	2.6155E-67	1.8443E-48	9.2150E-45
O-	2.7505E-13	5.4364E-10	1.2152E-09
O2	1.7102E-01	8.4854E-02	5.0902E-02
O2+	1.2330E-10	4.1391E-08	9.6405E-08
O2-	1.7458E-13	7.7547E-11	9.7289E-11
C	1.1508E-12	1.6351E-08	1.0433E-07
C+	2.0824E-20	7.3778E-14	1.7711E-12
C++	6.1883E-54	2.7185E-38	5.1880E-35
C-	1.4709E-24	1.2435E-17	1.6190E-16
CO	4.2908E-01	5.2337E-01	5.1998E-01
CO+	9.4447E-14	8.5371E-10	4.8824E-09
CO2	3.1220E-01	3.7618E-02	1.8464E-02
C2	5.3840E-21	1.0798E-14	1.6357E-13

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_1 = 3.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1809E+02	3.9391E+03	4.7322E+03
T	8.4292E+00	1.1280E+01	1.1808E+01
RHO	1.9968E+01	2.0764E+02	2.2755E+02
M	2.5862E-01	4.0568E-01	5.4115E-01
A	3.0408E+00	4.0801E+00	4.2958E+00
S	1.4595E+00	1.4338E+00	1.6756E+00
Z	1.2958E+00	1.5818E+00	1.7626E+00
GAME	8.4650E-01	8.7757E-01	8.8617E-01
U	1.2654E+01	1.2183E+00	1.2194E+00

SPECIES ----- MOLE FRACTIONS -----

E-	5.5277E-11	1.7555E-08	3.7117E-08
O	6.4801E-02	2.8504E-01	3.6159E-01
O+	6.7329E-15	9.4973E-11	3.7214E-10
O++	4.5624E-48	8.4440E-51	4.2022E-49
O-	1.0451E-13	2.3120E-10	5.0293E-10
O2	1.6281E-01	1.2062E-01	9.1428E-02
O2+	5.5530E-11	1.7560E-08	3.6472E-08
O2-	8.4283E-14	5.2273E-11	7.9766E-11
C	3.2949E-13	3.3098E-09	1.2361E-08
C+	1.6427E-21	5.7512E-15	4.2499E-14
C++	1.0032E-54	2.0570E-40	8.8141E-40
C-	1.3704E-25	1.3409E-18	8.7462E-18
CO	3.9175E-01	5.2576E-01	5.2435E-01
CO+	2.9031E-14	1.8472E-10	6.7400E-10
CO2	2.7664E-01	4.8578E-02	4.2436E-02
C2	7.7722E-22	1.1638E-15	7.2668E-15

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_1 = 4.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7007E+02	5.2650E+03	4.3823E+03
T	8.9106E+00	1.2691E+01	1.4158E+01
RHO	2.1582E+01	2.2046E+02	2.2922E+02
M	8.4384E-02	7.4196E-01	9.2343E-01
A	3.2637E+00	4.6581E+00	5.1994E+00
S	1.5381E+00	1.7410E+00	1.7894E+00
Z	1.4045E+00	1.8819E+00	1.9660E+00
GAME	8.5111E-01	9.0855E-01	9.7121E-01
U	1.4115E+01	1.3833E+00	1.4672E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.4345E-10	1.1092E-07	5.0078E-07
O	1.1553E-01	4.2253E-01	4.7824E-01
O+	7.1822E-14	3.7037E-09	7.2330E-08
O++	8.3225E-64	3.4827E-45	2.5882E-39
O-	4.1721E-13	1.2338E-09	3.6282E-09
O2	1.7277E-01	4.6223E-02	1.2349E-02
O2+	2.4410E-10	1.0288E-07	2.1530E-07
O2-	3.3152E-13	8.9365E-11	7.8217E-11
C	2.8580E-12	1.1841E-07	3.3772E-06
C+	3.5874E-20	1.9144E-12	4.6224E-10
C++	7.8219E-51	5.6852E-36	5.8930E-30
C-	4.0155E-24	1.7474E-14	1.3271E-14
CO	4.6041E-01	5.1470E-01	5.0448E-01
CO+	2.2856E-13	5.5809E-09	1.1351E-07
CO2	2.5130E-01	1.6448E-02	3.9303E-02
C2	1.5000E-20	1.7794E-13	2.1823E-11

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.005+00 \text{ N/SQ-M}, \quad U_{S1} = 4.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9808E+02	5.9498E+03	7.3711F+03
T	9.1580F+00	1.4111E+01	1.7972F+01
RHO	2.2230E+01	2.1439F+02	3.0485E+02
H	-9.5925E-03	-2.2215E-01	-1.1564E+00
A	3.2834E+00	5.1928F+00	5.9984E+01
S	1.5790E+00	1.7928E+00	1.8446E+00
Z	1.4640E+00	1.5667E+00	3.0071F+00
GAME	8.7382E-01	9.716E-01	9.9957E-01
U	1.4842F+01	1.5403E+00	1.8047E+00

SPECIES	MOLE FRACTIONS		
E-	4.9218E-10	4.8404E-07	2.4579E-05
O	1.4920E-01	4.7867E-07	4.9995E-01
O+	2.8135E-13	7.2894E-08	6.5415E-06
O++	2.9374F-62	1.5080E-29	3.5405E-30
C-	1.3955E-12	3.3558E-09	5.1109E-08
O2	1.4907E-01	1.2082E-02	7.6096E-04
O2+	4.9418E-10	3.0473E-07	5.8183E-07
O2-	5.8781E-12	7.0448E-11	8.0774E-11
C	9.3215E-12	2.0482E-06	1.9824E-03
C+	5.7514F-19	4.2254E-10	5.9488E-04
C++	1.4424E-50	3.9073E-20	2.5547E-21
C-	3.7458E-23	1.5142E-14	1.2374E-10
CO	4.8573E-01	5.0439E-01	4.970E-01
CO+	6.9695E-13	1.0941E-07	1.1958E-05
CO2	1.9700E-01	3.8525E-03	1.9801E-04
C2	9.8282E-20	1.6722E-11	2.5262E-07

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad U_{S1} = 4.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2742E+02	6.5952E+03	8.3373E+C3
T	9.4114F+00	1.7149E+01	2.0052E+01
RHO	2.2785E+01	1.9244E+02	2.9291E+C2
H	-1.0814E-01	-1.1087E+00	-1.3797F+C0
A	3.5091E+00	5.9491E+00	6.0657E+C0
S	1.6209E+00	1.8391F+00	1.8878E+00
Z	1.5270E+00	1.9584E+00	2.0450E+C0
GAME	8.5686E-01	1.0327E+00	8.9546E-C1
U	1.5567E+01	1.8447E+00	1.9492E+00

SPECIES	MOLE FRACTIONS		
E-	9.1653E-10	1.1485E-05	1.9167E-04
O	1.8614E-01	4.5863E-01	5.1075E-01
O+	6.8951E-13	3.4665E-06	2.2254E-05
O++	4.9822E-60	1.0692E-21	5.2242E-27
O-	2.8319E-12	2.7426E-08	2.4437E-07
O2	1.5923E-01	1.1766E-03	2.6640E-04
O2+	9.1802E-10	5.6701E-07	4.6578E-07
O2-	9.6631E-13	6.3782E-11	1.5007E-10
C	2.2068E-11	6.8063E-04	2.2019E-02
C+	9.4602E-19	1.3872E-06	1.2763E-04
C++	6.1877E-48	1.0305E-22	2.0866E-18
C-	1.0417E-22	2.2436E-11	6.6962E-09
CO	5.0402E-01	4.9918E-01	4.6651E-01
CO+	1.6094E-12	6.0915E-06	4.1573E-05
CO2	1.5061E-01	3.1136E-04	6.2471E-05
C2	2.5933E-19	5.1300E-08	8.3940E-06

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad U_{S1} = 4.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5808E+02	7.2888E+03	9.2821E+03
T	9.6779E+00	1.9546E+01	2.1064E+01
RHO	2.3222E+01	1.8387E+02	2.0938E+02
H	-2.1126E-01	-1.3045E+00	-1.5995E+00
A	3.6421E+00	6.0059E+00	6.2413E+00
S	1.6636E+00	1.8791E+00	1.9276E+00
Z	1.5931E+00	2.0281E+00	2.1045E+00
GAME	8.6035E-01	9.0992E-01	8.7869E-01
U	1.6288E+01	2.0603E+00	2.0318E+00

SPECIES	MOLE FRACTIONS		
E-	1.7383E-09	1.2429E-04	4.3552E-04
O	2.2831E-01	5.0670E-01	5.2441E-01
O+	2.5372E-12	1.7534E-05	3.4047E-05
O++	1.7265E-59	1.0278E-27	8.0549E-26
O-	5.6576E-12	1.5951E-07	4.9348E-07
O2	1.4430E-01	3.0572E-04	1.9422E-04
O2+	1.7381E-09	4.6397E-07	4.3572E-07
O2-	1.4718E-12	1.0987E-10	2.2632E-10
C	6.9931E-11	1.4024E-02	4.9106E-02
C+	1.4787E-17	7.3443E-05	3.4254E-04
C++	2.2835E-47	5.3341E-19	2.1704E-17
C-	7.6263E-22	2.7790E-09	2.9826E-08
CO	5.1635E-01	4.7865E-01	4.2535E-01
CO+	4.7921E-12	3.3013E-05	5.9021E-05
CO2	1.1104E-01	7.4465E-05	4.0177E-05
C2	1.6142E-18	4.1848E-06	2.6401E-05

 $P_1 = 5.00F+00 \text{ N/SQ-M}, \quad U_{S1} = 4.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9005E+02	8.0618E+03	1.0236F+04
T	9.9595E+00	2.0647E+01	2.1763E+01
RHO	2.3558E+01	1.8761E+02	2.1670E+C2
H	-3.1855E-C1	-1.5111E+00	-1.8257F+00
A	3.7831E+00	6.1562E+00	6.4269F+00
S	1.7070F+00	1.5176E+00	1.9673F+00
Z	1.6625E+00	2.0811E+00	2.1705F+00
GAME	8.4440E-01	8.8198E-01	8.7446E-01
U	1.7008E+01	2.1392E+00	2.0742E+00

SPECIES	MOLE FRACTIONS		
E-	3.1213E-09	3.3464E-04	7.2051E-04
O	2.7467E-01	5.1915E-01	5.2859E-C1
O+	6.6754E-12	2.9043E-05	4.5824E-05
O++	1.1460E-56	2.6580E-26	4.8305E-25
O-	1.0552E-11	3.6229E-07	7.9003E-07
O2	1.2407E-01	2.0181E-04	1.6503E-04
O2+	3.1157E-09	4.1499E-07	4.3876E-07
O2-	2.1058E-12	1.7054E-10	3.0927E-10
C	1.7442E-10	3.8616E-02	7.7353E-02
C+	4.1040E-17	2.5377E-04	6.1347E-04
C++	4.8575E-45	9.2673E-18	9.4479E-17
C-	2.5513E-21	1.7279E-08	7.4031E-08
CO	5.2228E-01	4.4130E-01	3.8236E-01
CO+	1.1587E-11	5.1796E-05	7.1647E-05
CO2	7.8949E-C2	4.3882E-05	2.9805E-05
C2	4.9779E-18	1.7949E-05	4.9605E-05

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $p_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2331E+02	8.8402E+03	1.1182E+04
T	1.0271E+01	2.1385E+01	2.2357E+01
RHO	2.3761E+01	1.9313E+02	2.2320E+02
H	-4.3119E-01	-1.7266E+00	-2.0607E+00
A	3.9362E+00	6.3324E+00	6.6151E+00
S	1.7509E+00	1.9562E+00	2.0077E+00
Z	1.7344E+00	2.1428E+00	2.2409E+00
GAME	8.6970E-01	8.7506E-01	8.7345E-01
U	1.7723E+01	2.1841E+00	2.1162E+00

SPECIES	MOLE FRACTIONS		
E-	5.7428E-09	5.9932E-04	1.0792E-03
O	3.2353E-01	5.3277E-01	5.5274E-01
O+	2.3804E-11	3.9888E-05	5.9103E-05
O++	7.8334E-56	1.9381E-25	2.2671E-24
D-	1.9202E-11	6.0732E-07	1.1399E-06
O2	1.0017E-01	1.6515E-04	1.4725E-04
O2+	5.7052E-09	4.0747E-07	4.5495E-07
O2-	2.7567E-12	2.3633E-10	3.9974E-10
C	5.6938E-10	6.5724E-02	1.0560E-01
C+	4.4506E-16	4.9477E-04	9.3909E-04
C++	3.5482E-44	4.8299E-17	3.0805E-16
C-	1.5074E-20	4.8600E-08	1.4319E-07
CO	5.2336E-01	4.0007E-01	3.3926E-01
CO+	3.5791E-11	6.4915E-05	8.1872E-05
CO2	5.2939E-02	3.1596E-05	2.2890E-05
C2	2.9754E-17	3.7823E-05	7.4744E-05

 $p_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9347E+02	1.0328E+04	1.2911E+04
T	1.1093E+01	2.2506E+01	2.3392E+01
RHO	2.3623E+01	2.0129E+02	2.3080E+02
H	-6.6931E-01	-2.1816E+00	-2.5570E+00
A	4.3134E+00	6.6928E+00	6.9982E+00
S	1.8294E+00	2.0350E+00	2.0912E+00
Z	1.8824E+00	2.2798E+00	2.3915E+00
GAME	8.9114E-01	8.7303E-01	8.7549E-01
U	1.9136E+01	2.2506E+00	2.1846E+00

SPECIES	MOLE FRACTIONS		
E-	2.1335E-08	1.2790E-03	1.9689E-03
O	4.2365E-01	5.6017E-01	5.7497E-01
O+	3.8145E-10	6.5079E-05	9.3436E-05
O++	7.2153E-51	3.4443E-24	2.8452E-23
D-	5.5608E-11	1.2220E-06	2.0032E-06
O2	4.5340E-02	1.3140E-04	1.2416E-04
O2+	2.0532E-08	4.3244E-07	5.0762E-07
O2-	3.2978E-12	3.7982E-10	5.9075E-10
C	8.6311E-05	1.2039E-01	1.5597E-01
C+	4.2864E-14	1.1314E-03	1.7804E-03
C++	5.5578E-40	4.5471E-16	2.0197E-15
C-	5.6928E-19	1.7307E-07	3.6821E-07
CO	5.1385E-01	3.1665E-01	2.5586E-01
CO+	4.8294E-10	8.2535E-05	9.5897E-05
CO2	1.7154E-02	1.8814E-05	1.3813E-05
C2	1.4027E-17	8.2280E-05	1.2142E-04

 $p_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5781E+02	9.6236E+03	1.2094E+04
T	1.0632E+01	2.1983E+01	2.2890E+01
RHO	2.3813E+01	1.9813E+02	2.2824E+02
H	-5.4799E-01	-1.9503E+00	-2.3029E+00
A	4.1071E+00	6.5120E+00	6.8051E+00
S	1.7953E+00	1.9956E+00	2.0489E+00
Z	1.8083E+00	2.2095E+00	2.3147E+00
GAME	8.7738E-01	8.7307E-01	8.7403E-01
U	1.8434E+01	2.2192E+00	2.1502E+00

SPECIES	MOLE FRACTIONS		
E-	1.0683E-08	9.1290E-04	1.4873E-03
O	3.7388E-01	5.4456E-01	5.6657E-01
O+	6.6121E-11	5.1649E-05	7.4646E-05
O++	2.9127E-53	9.2736E-25	8.5004E-24
D-	3.3884E-11	8.9451E-07	1.5444E-06
O2	7.3366E-02	1.4508E-04	1.3476E-04
O2+	1.0517E-08	4.1613E-07	4.7918E-07
O2-	3.2817E-12	3.0704E-10	4.9528E-10
C	1.9654E-09	9.3224E-02	1.3320E-01
C+	3.7377E-15	7.8660E-04	1.3238E-02
C++	6.2903E-42	1.6584E-16	8.2026E-16
C-	8.2718E-20	9.9816E-08	2.4043E-07
CO	5.2012E-01	3.5816E-01	2.9700E-01
CO+	1.1725E-10	7.5228E-05	9.0212E-05
CO2	3.2525E-02	2.4134E-05	1.7846E-05
C2	1.7485E-16	6.0465E-05	9.9403E-05

 $p_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2999E+02	1.0822E+04	1.3460E+04
T	1.1819E+01	2.2971E+01	2.3863E+01
RHO	2.2985E+01	2.0023E+02	2.2832E+02
H	-7.9507E-01	-2.4185E+00	-2.8086E+00
A	4.6243E+00	6.8726E+00	7.1929E+00
S	1.8823E+00	2.0779E+00	2.1350E+00
Z	1.9508E+00	2.3528E+00	2.4705E+00
GAME	9.2747E-01	8.7393E-01	8.7761E-01
U	1.9820E+01	2.2788E+00	2.2191E+00

SPECIES	MOLE FRACTIONS		
E-	5.5136E-08	1.7035E-03	2.5404E-03
O	4.6858E-01	5.7336E-01	5.9277E-01
O+	3.3210E-09	8.0634E-05	1.1639E-04
O++	3.9797E-47	1.0627E-23	8.7394E-23
D-	1.1365E-10	1.5735E-06	2.4932E-06
O2	1.9033E-02	1.1970E-04	1.1349E-04
O2+	4.7829E-08	4.4563E-07	5.3463E-07
O2-	2.7269E-12	4.4406E-10	6.7062E-10
C	8.2906E-08	1.4674E-01	1.8557E-01
C+	1.9553E-12	1.5344E-03	2.3249E-03
C++	2.9404E-36	1.0763E-15	4.5734E-15
C-	9.8878E-18	2.6702E-07	5.2309E-07
CO	5.0619E-01	2.7625E-01	2.1631E-01
CO+	4.1004E-09	8.9888E-05	1.0163E-04
CO2	6.1958E-03	1.4587E-05	1.0428E-05
C2	3.6317E-14	1.0391E-04	1.3820E-04

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 3.00E+00 \text{ N/SQ-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6624E+02	1.0698E+04	1.3236E+04
T	1.3406E+01	2.3349E+01	2.4263E+01
RHO	2.1197E+01	1.8880E+02	2.1357E+02
H	-9.2493E-01	-2.6540E+00	-3.0612E+00
A	5.2517E+00	7.0422E+00	7.3787E+00
S	1.9244E+00	2.1725E+00	2.1815E+00
Z	1.9926E+00	2.4267E+00	2.5495E+00
GAME	1.0324E+00	8.7524E-01	8.8014E-01
U	2.0449E+01	2.2993E+00	2.2481E+00

SPECIES	MOLE FRACTIONS		
E-	4.0704E-07	2.1876E-03	3.2097E-03
O	4.9549E-01	5.8583E-01	6.0464E-01
O+	1.1463E-07	9.7983E-05	1.4331E-04
O++	1.5753E-40	2.8767E-23	2.3149E-22
C-	3.9056E-10	1.8797E-06	2.9100E-06
O2	2.8781E-03	1.2046E-04	1.0060E-04
O2+	1.3092E-07	0.465509E-07	5.4695E-07
O2-	1.6252E-12	0.467059E-10	6.9139E-10
C	5.9107E-06	5.017156E-01	2.0924E-01
C+	1.8166E-09	5.019980E-03	2.9662E-03
C++	5.1082E-30	2.2697E-15	9.4048E-15
C-	2.4625E-15	3.26689E-07	6.7834E-07
CO	5.0079E-01	2.3789E-01	1.7934E-01
CO+	1.5808E-07	9.3387E-05	1.0722E-04
CO2	8.2863E-04	1.0930E-05	7.5041E-06
C2	1.7402E-11	1.1809E-04	1.4572E-04

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4131E+02	1.0381E+04	1.2735E+04
T	1.7542E+01	2.4109E+01	2.5163E+01
RHO	1.8052E+01	1.6652E+02	1.8662E+02
H	-1.1977E+00	-3.1413E+00	-3.5857E+00
A	5.6622E+00	7.3976E+00	7.7875E+00
S	1.9923E+00	2.2122E+00	2.2759E+00
Z	2.0241E+00	2.5756E+00	2.7119E+00
GAME	9.0295E-01	8.7994E-01	8.8871E-01
U	2.1571E+01	2.3480E+00	2.3214E+00

SPECIES	MOLE FRACTIONS		
E-	8.7742E-05	3.6543E-03	5.1380E-03
O	5.0599E-01	6.0896E-01	6.2611E-01
O+	9.9458E-06	1.4651E-04	2.2943E-04
O++	2.5370E-30	1.8753E-22	1.9468E-21
C-	1.8168E-08	2.5530E-06	3.8836E-06
O2	8.9989E-05	8.4516E-05	7.6386E-05
O2+	1.1281E-07	4.7473E-07	5.8272E-07
O2-	3.2614E-12	5.0283E-10	7.0104E-10
C	1.1885E-02	2.1797E-01	2.5250E-01
C+	6.0698E-05	3.2140E-03	4.8110E-03
C++	2.1759E-20	9.1714E-15	4.3574E-14
C-	2.5739E-10	6.1423E-07	1.0648E-06
CO	4.8183E-01	1.6593E-01	1.1088E-01
CO+	1.7004E-05	9.6458E-05	1.0189E-04
CO2	2.2540E-05	5.7984E-06	3.3941E-06
C2	1.1057E-06	1.3222E-04	1.4142E-04

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0216E+02	1.0148E+04	1.2488E+04
T	1.5966E+01	2.3465E+01	2.4622E+01
RHO	1.8843E+01	1.7146E+02	1.9300E+02
H	-1.0588E+00	-2.8873E+00	-3.3101E+00
A	5.7035E+00	7.2042E+00	7.5601E+00
S	1.9504E+00	2.1690E+00	2.2296E+00
Z	2.0015E+00	2.5008E+00	2.6279E+00
GAME	1.0180E+00	8.7694E-01	8.8322E-01
U	2.1024E+01	2.3137E+00	2.2778E+00

SPECIES	MOLE FRACTIONS		
E-	1.1678E-05	2.7387E-03	4.0115E-03
O	5.0022E-01	5.5748E-01	6.1551E-01
O+	3.2246E-06	1.1750E-04	1.7618E-04
O++	2.5591E-32	5.9997E-22	5.6837E-22
C-	3.9240E-09	2.1295E-06	3.2496E-06
O2	2.6411E-04	9.3473E-05	8.6805E-05
O2+	1.5538E-07	4.5152E-07	5.4779E-07
O2-	1.8489E-12	4.6409E-10	6.6391E-10
C	1.0884E-03	1.9497E-01	2.3115E-01
C+	3.0644E-06	2.5289E-03	3.7367E-03
C++	3.5153E-23	4.1704E-15	1.8406E-14
C-	4.9557E-12	4.6455E-07	8.2496E-07
CO	4.9823E-01	2.0185E-01	1.4507E-01
CO+	5.2377E-06	9.4429E-05	1.0214E-04
CO2	7.0746E-05	7.9690E-06	5.1403E-06
C2	3.4404E-08	1.2534E-04	1.4439E-04

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.8341E+02	1.1109E+04	1.3609E+04
T	1.8259E+01	2.4666E+01	2.5904E+01
RHO	1.8114E+01	1.6915E+02	1.8761E+02
H	-1.3419E+00	-3.4141E+00	-3.8863E+00
A	5.7471E+00	7.6216E+00	8.0692E+00
S	2.0234E+00	2.2565E+00	2.3216E+00
Z	2.0617E+00	2.6625E+00	2.8003E+00
GAME	8.7546E-01	8.8651E-01	8.9761E-01
U	2.2374E+01	2.3991E+00	2.3917E+00

SPECIES	MOLE FRACTIONS		
E-	2.1690E-04	4.4043E-03	6.8267E-03
O	5.1489E-01	6.2004E-01	6.2597E-01
O+	1.4783E-05	1.8952E-04	3.2033E-04
O++	3.9177E-29	6.7325E-22	8.7846E-21
C-	3.8238E-08	3.1700E-06	4.8736E-06
O2	6.0962E-05	7.1714E-05	6.6454E-05
O2+	9.5957E-08	5.1792E-07	6.4794E-07
O2-	4.7548E-12	5.7245E-10	7.7516E-10
C	2.9604E-02	2.4025E-01	2.7250E-01
C+	1.7761E-04	4.1157E-03	6.4112E-03
C++	2.4855E-19	2.2087E-14	1.2470E-13
C-	1.3489E-09	8.3071E-07	1.4302E-06
CO	4.5500E-01	1.3048E-01	7.7665E-02
CO+	2.4447E-05	9.8499E-05	1.0091E-04
CO2	1.6052E-05	4.0885E-06	2.0341E-06
C2	4.1048E-06	1.2622E-04	1.3254E-04

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

P1 = 5.00E+00 N/SC-M, US1 = 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2734E+02	1.2001E+04	1.4705E+04
T	1.8805E+01	2.5320E+01	2.6894E+01
RHO	1.8377E+01	1.7253E+02	1.8923E+02
H	1.4907E+00	-3.6984E+00	-4.2045E+00
A	5.8580E+00	7.8736E+00	8.4227E+00
S	2.0544E+00	2.2997E+00	2.3635E+00
Z	2.1047E+00	2.7473E+00	2.8895E+00
GAME	8.6702E-01	8.9121E-01	9.1288E-01
U	2.3092E+01	2.4628E+00	2.4852E+00

SPECIES	MOLE FRACTIONS		
E-	3.7381E-04	5.7080E-03	9.6207E-03
O	5.2665E-01	6.3927E-01	6.4400E-01
O+	1.9036E-05	2.5478E-04	4.9406E-04
O++	2.1593E-28	2.8593E-21	6.9401E-20
N-	6.1332E-08	3.9729E-06	6.2547E-06
O2-	4.9714E-05	6.9297E-05	5.4768E-05
O2+	8.9987E-08	5.7426E-07	7.4080E-07
O2++	6.3461E-12	6.5031E-10	8.4422E-10
C-	4.9116E-02	2.6089E-01	2.8911E-01
C+	3.2510E-04	5.3586E-03	9.0471E-03
C++	1.0599E-18	4.8782E-14	4.8810E-13
C-	3.5406E-09	1.1199E-06	1.9533E-06
CO	4.2561E-01	9.7214E-02	4.7439E-02
CO+	2.9654E-05	9.9196E-05	9.7024E-05
CO2	1.0444E-05	2.4821E-06	1.0091E-06
C2	8.3936E-06	1.3379E-04	1.1309E-04

P1 = 5.00E+00 N/SC-M, US1 = 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1972E+02	1.4008E+04	1.7281E+04
T	1.9575E+01	2.7142E+01	3.0754E+01
RHO	1.9056E+01	1.7702E+02	1.8643E+02
H	-1.8024E+00	-4.2554E+00	-4.8982E+00
A	6.0902E+00	8.5262E+00	9.4402E+00
S	2.1172E+00	2.3859E+00	2.4593E+00
Z	2.1956E+00	2.9155E+00	3.0538E+00
GAME	8.6223E-01	9.1869E-01	9.6141E-01
U	2.4542E+01	2.6449E+00	2.7902E+00

SPECIES	MOLE FRACTIONS		
E-	7.5685E-04	1.0811E-02	2.6220E-02
O	5.4474E-01	6.4582E-01	6.4451E-01
O+	2.7942E-05	5.6720E-04	1.9550E-03
O++	2.4882E-27	1.2427E-19	3.7276E-17
N-	1.1717E-07	6.6637E-06	1.1549E-05
O2-	3.9529E-05	4.8891E-05	2.6102E-05
O2+	8.8742E-08	7.3994E-07	1.0774E-06
O2++	9.7091E-12	7.7820E-10	8.2844E-10
C-	5.9220E-02	2.9298E-01	2.9462E-01
C+	6.9158E-04	1.0178E-02	2.4705E-02
C++	7.5220E-18	7.2842E-12	3.0299E-11
C-	1.2079E-09	2.0212E-06	3.7473E-06
CO	3.5434E-01	3.5407E-02	8.3229E-03
CO+	2.7366E-05	9.2538E-05	7.4599E-05
CO2	4.8117E-05	7.6564E-07	8.5397E-08
C2	1.8940E-05	1.0166E-04	4.7613E-05

P1 = 5.00E+00 N/SC-M, US1 = 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.7281E+02	1.2979E+04	1.5938E+04
T	1.9205E+01	2.6112E+01	2.8320E+01
RHO	1.8707E+01	1.7548E+02	1.8914E+02
H	-1.6442E+00	-3.9925E+00	-4.5413E+00
A	5.9732E+00	8.1660E+00	8.8921E+00
S	2.0856E+00	2.3430E+00	2.4135E+00
Z	2.1510E+00	2.8324E+00	2.9755E+00
GAME	8.6367E-01	9.0159E-01	9.3853E-01
U	2.3816E+01	2.5420E+00	2.6155E+00

SPECIES	MOLE FRACTIONS		
E-	5.5382E-04	7.6322E-03	1.5049E-02
O	5.3469E-01	6.3917E-01	6.4816E-01
O+	2.3326E-05	3.6257E-04	8.9631E-04
O++	7.8451E-28	1.5207E-20	1.0929E-18
N-	8.7510E-08	5.0250E-06	8.4310E-06
O2-	4.3604E-05	6.0046E-05	4.0693E-05
O2+	8.8321E-08	6.4574E-07	8.7727E-07
O2++	7.9725E-12	7.2398E-10	8.7540E-10
C-	6.9183E-02	2.7902E-01	2.9869E-01
C+	4.9672E-04	7.1778E-03	1.4075E-02
C++	3.0703E-18	1.8106E-13	3.0011E-12
C-	7.0791E-09	1.5054E-06	2.7176E-06
CO	3.9495E-01	6.6348E-02	2.2909E-02
CO+	3.3778E-05	9.7700E-05	8.8314E-05
CO2	8.3342E-06	1.5814E-06	3.8575E-07
C2	1.3475E-05	1.2276E-04	8.1877E-05

P1 = 5.00E+00 N/SC-M, US1 = 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6805E+02	1.5070E+04	1.8718E+04
T	1.9873E+01	2.8566E+01	3.2623E+01
RHO	1.9411E+01	1.7629E+02	1.8841E+02
H	-1.9661E+00	-4.6065E+00	-5.2719E+00
A	6.2084E+00	8.9833E+00	9.8935E+00
S	2.1492E+00	2.4281E+00	2.5035E+00
Z	2.2503E+00	2.8925E+00	3.1283E+00
GAME	8.4189E-01	8.4405E-01	8.5506E-01
U	2.5249E+01	2.7823E+00	2.9902E+00

SPECIES	MOLE FRACTIONS		
E-	6.8449E-04	1.6728E-02	4.4179E-02
O	5.5477E-01	6.4825E-01	6.3207E-01
O+	2.3041E-05	1.0234E-03	4.2207E-03
O++	6.6809E-27	1.8541E-18	1.1824E-15
N-	1.6053E-07	8.5157E-06	1.5019E-05
O2-	3.6654E-05	3.6119E-05	1.7143E-05
O2+	9.0712E-08	8.7129E-07	1.3187E-06
O2++	1.1533E-11	7.6086E-10	7.6142E-10
C-	1.0933E-01	2.6926E-01	2.7657E-01
C+	9.1147E-04	1.5631E-02	3.9515E-02
C++	1.4114E-17	4.3317E-12	2.8486E-10
C-	1.8772E-09	2.7500E-06	4.7201E-06
CO	3.3284E-01	1.8508E-02	2.9270E-02
CO+	4.0253E-05	8.3822E-05	6.1388E-05
CO2	5.4759E-06	2.6240E-07	1.9624E-08
C2	2.4424E-05	7.2023E-05	2.5423E-05

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 7.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1777E+02	1.6151E+04	2.0207E+04
T	2.0172E+01	2.0431E+01	3.4662E+C1
RHO	1.6758E+01	1.7329E+02	1.8190E+C2
H	-2.1374E+00	-4.9255E+00	-5.6519E+C3
A	6.3282E+00	9.4640E+00	1.0273E+C1
S	2.1817E+00	2.4689E+00	2.5454E+C0
Z	2.3027E+00	3.0610E+00	3.2050E+C1
GAME	8.6212E-01	9.6156E-01	9.5005E-C1
U	2.5996E+01	2.9652E+00	3.1672E+00

SPECIES	MOLE FRACTIONS		
E-	1.2402E-03	2.7649E-02	6.5415E-02
O	5.6464E-01	6.4372E-01	6.1493E-01
O+	3.8810E-05	2.0830E-03	7.7648E-02
O++	1.6296E-26	4.5645E-17	1.8158E-14
O-	1.8801E-07	1.1240E-05	1.7969E-05
O2	3.4441E-05	2.4375E-05	1.1989E-05
O2+	9.3630E-08	8.1504E-06	1.5541E-06
O2-	1.3545E-11	3.4750E-10	6.8737E-10
C	1.2907E-01	3.8629E-01	2.5293E-01
C+	1.1587E-03	3.7259E-02	5.7621E-02
C++	3.1922E-17	3.8363E-11	1.6396E-09
C-	2.7271E-08	3.2638E-06	5.3739E-06
CO	3.0374E-01	7.4513E-03	1.2373E-03
CO+	4.2872E-05	7.1498E-05	5.1428E-05
CO2	4.7573E-06	7.0092E-08	5.9347E-09
C2	3.0204E-05	4.3227E-05	1.4480E-05

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 7.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6894E+02	1.7261E+04	2.1740E+04
T	2.0463E+01	3.2405E+01	3.6448E+01
RHO	2.0089E+C1	1.7038E+02	1.8156E+C2
H	-2.3042E+00	-5.2529E+00	-6.0385E+00
A	6.4504E+00	9.8548E+00	1.0629E+01
S	2.2146E+00	2.5681E+00	2.5856E+C0
Z	2.3568E+00	3.1264E+00	3.2852E+00
GAME	8.6274E-01	9.5800E-01	9.4343E-01
U	2.4722E+01	2.1542E+00	3.3241E+00

SPECIES	MOLE FRACTIONS		
E-	1.5291E-03	4.3643E-02	8.7621E-02
O	5.7432E-01	6.2254E-01	5.9557E-01
O+	4.5492E-05	4.0893E-03	1.2526E-02
O++	4.1471E-26	9.3494E-16	1.5600E-13
O-	2.2575E-C7	1.4100E-05	2.0266E-05
O2	3.2505E-C6	1.6533E-05	8.9799E-06
O2+	9.7213E-08	1.2474E-06	1.7734E-06
O2-	1.5660E-11	6.8512E-10	6.281E-10
C	1.4844E-C1	2.7712E-01	2.2851E-01
C+	1.4385E-03	3.9512E-02	7.5075E-02
C++	6.2258E-17	2.5056E-10	6.3801E-C9
C-	3.8120E-08	4.4400E-06	5.6964E-06
CO	2.7411E-C1	2.9731E-02	6.1191E-04
CO+	4.5169E-05	6.0028E-05	4.3922E-05
CO2	3.9719E-06	1.9228E-08	2.2551E-09
C2	2.5485E-C5	2.4807E-05	8.8320E-06

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 7.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0213E+03	1.8416E+04	2.3217E+C4
T	2.0748E+01	3.4218E+01	3.8048E+C1
RHO	2.0404E+01	1.6848E+02	1.8154E+C2
H	-2.4807E+00	-5.8957E+00	-6.4325E+00
A	6.5752E+00	1.0193E+01	1.0971E+C1
S	2.2480E+00	2.5459E+00	2.6247E+C0
Z	2.4125E+00	3.1944E+00	3.3682E+C0
GAME	8.6376E-01	9.5043E-01	9.3912E-01
U	2.7447E+01	3.3279E+00	2.4667E+00

SPECIES	MOLE FRACTIONS		
E-	1.9553E-03	6.2445E-02	1.0986E-01
O	5.8378E-01	6.1752E-01	5.7487E-01
O+	5.3257E-05	7.1147E-03	1.8483E-02
O++	9.1893E-26	1.1161E-14	9.0567E-13
O-	2.7777E-07	1.6893E-05	2.1986E-05
O2	3.0813E-05	1.1923E-05	7.0207E-06
O2+	1.0174E-07	1.4443E-04	1.9752E-06
O2-	1.7857E-11	6.2228E-10	5.6535E-10
C	1.6727E-01	2.5616E-01	2.0500E-01
C+	1.7551E-C3	5.5299E-02	9.1368E-02
C++	1.1728E-17	1.2298E-09	1.9097E-08
C-	5.1341E-08	4.9940E-06	5.7764E-06
CO	2.4507E-C1	1.7401E-03	3.2630E-04
CO+	4.7141E-C5	5.1091E-05	3.7949E-05
CO2	2.3052E-C6	5.4682E-09	5.9792E-10
C2	4.0309E-05	1.4901E-05	5.6483E-C6

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 8.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0750E+03	1.9609E+04	2.4919E+04
T	2.1034E+01	3.5827E+01	3.9505E+01
RHO	2.0692E+01	1.6761E+02	1.9267E+02
H	-2.6618E+00	-5.9344E+00	-6.8323E+C0
A	6.7025E+00	1.0509E+01	1.1301E+01
S	2.2819E+00	2.5823E+00	2.6628E+00
Z	2.4697E+00	3.2654E+00	3.4522E+00
GAME	8.6508E-01	9.4405E-01	9.3625E-C1
U	2.8171E+01	2.4837E+00	3.5898E+00

SPECIES	MOLE FRACTIONS		
E-	2.2318E-03	8.2193E-02	1.3162E-01
O	5.9299E-01	6.0058E-01	5.5322E-01
O+	6.2614E-05	1.1107E-02	2.5582E-02
O++	2.3165E-25	8.2228E-14	3.9734E-12
O-	3.3219E-07	1.8592E-05	2.3205E-05
O2	2.9182E-05	9.1071E-06	5.6676E-06
O2+	1.0680E-C7	1.6295E-06	2.1568E-06
O2-	2.0249E-11	5.6729E-10	5.1290E-10
C	1.8581E-01	2.3426E-01	1.8318E-01
C+	2.1206E-C3	7.1064E-02	1.0603E-01
C++	2.1363E-16	4.3629E-09	4.7478E-08
C-	6.7386E-08	5.2996E-06	5.6647E-06
CO	2.1666E-01	7.0869E-04	1.9912E-04
CO+	4.8814E-05	4.4194E-05	3.3014E-05
CO2	2.7157E-06	2.6335E-09	4.9110E-10
C2	4.4466E-05	9.4690E-06	3.7388E-06

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_{S1} = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1301E+03	2.0834E+04	2.6562E+04
T	2.1329E+01	3.7326E+01	4.0871E+01
RHO	2.0959E+01	1.6702E+02	1.8356E+02
H	-2.8474E+00	-6.2885E+00	-7.2429E+00
A	6.8366E+00	1.0826E+01	1.1627E+01
S	2.3162E+00	2.6193E+00	2.7006E+00
Z	2.5282E+00	3.2419E+00	3.5405E+00
GAME	8.6677E-01	9.3954E-01	9.3426E-01
U	2.8894E+01	3.6281E+00	3.7160E+00

SPECIES	MOLE FRACTIONS		
E-	2.6653E-03	1.0289E-01	1.5295E-01
O	6.0151E-01	5.8173E-01	5.3082E-01
O+	7.3843E-05	1.6259E-02	7.3881E-02
O++	5.1768E-25	4.5634E-13	1.4509E-11
O-	3.9394E-07	2.0161E-05	2.4007E-05
O2	2.7606E-05	7.1640E-06	4.6440E-06
O2+	1.1257E-07	1.8057E-06	2.3174E-06
O2-	2.2696E-11	5.1493E-10	4.6358E-10
C	2.0369E-01	2.1204E-01	1.6309E-01
C+	2.5417E-03	8.6613E-02	1.1907E-01
C++	3.8339E-16	1.2761E-08	1.0424E-07
C-	8.6658E-08	5.4011E-06	5.4760E-06
CO	1.8859E-01	3.9626E-04	1.2352E-04
CO+	5.0156E-05	3.8405E-05	2.8776E-05
CO2	2.2095E-06	1.1888E-09	2.5771E-10
C2	4.7806E-05	6.1648E-06	2.5246E-06

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_{S1} = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1866E+03	2.2082E+04	2.8223E+04
T	2.1636E+01	3.8666E+01	4.2158E+01
RHO	2.1191E+01	1.6706E+02	1.8446E+02
H	-3.0375E+00	-6.6512E+00	-7.6621E+00
A	6.9752E+00	1.1126E+01	1.1947E+01
S	2.3509E+00	2.6545E+00	2.7781E+00
Z	2.5879E+00	3.4184E+00	3.6293E+00
GAME	8.6892E-01	9.3654E-01	9.3283E-01
U	2.9615E+01	3.7617E+00	3.8367E+00

SPECIES	MOLE FRACTIONS		
E-	3.1815E-03	1.2280E-01	1.7363E-01
O	6.1051E-01	5.6251E-01	5.0765E-01
O+	8.7973E-05	2.2253E-02	4.3281E-02
O++	1.3186E-24	1.8917E-12	4.5418E-11
O-	4.6462E-07	2.1303E-05	2.4435E-05
O2	2.5976E-05	5.8313E-06	3.8483E-06
O2+	1.1907E-07	1.9641E-06	2.4520E-06
O2-	2.5208E-11	4.6959E-10	4.1702E-10
C	2.2053E-01	1.9158E-01	1.4495E-01
C+	3.0428E-03	1.0054E-01	1.2035E-01
C++	7.2262E-16	3.0744E-08	2.0710E-07
C-	1.0981E-07	5.3560E-06	5.1921E-06
CO	1.6211E-01	2.4061E-04	7.9599E-05
CO+	5.1150E-05	3.3730E-05	2.5102E-05
CO2	1.7540E-06	6.0332E-10	1.4253E-10
C2	5.0133E-05	4.1853E-06	1.7355E-06

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_{S1} = 8.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2443E+03	2.3341E+04	2.9893E+04
T	2.1962E+01	3.9933E+01	4.3281E+01
RHO	2.1389E+01	1.6711E+02	1.8526E+02
H	-3.2323E+00	-7.0224E+00	-8.0900E+00
A	7.1209E+00	1.1424E+01	1.2262E+01
S	2.3859E+00	2.6899E+00	2.7753E+00
Z	2.6488E+00	3.4978E+00	3.7194E+00
GAME	8.7185E-01	9.3438E-01	9.3182E-01
U	3.0334E+01	3.8880E+00	3.9528E+00

SPECIES	MOLE FRACTIONS		
E-	3.8023E-03	1.4264E-01	1.9362E-01
O	6.1875E-01	5.4225E-01	4.8292E-01
O+	1.0595E-04	2.9323E-02	5.3691E-02
O++	3.3282E-24	6.6573E-12	1.2601E-10
O-	5.4633E-07	2.2089E-05	2.4536E-05
O2	2.4267E-05	4.8125E-06	3.2101E-06
O2+	1.2642E-07	2.1069E-06	2.5573E-06
O2-	2.7743E-11	4.2612E-10	3.7293E-10
C	2.3746E-01	1.7227E-01	1.2872E-01
C+	3.6452E-03	1.1331E-01	1.3994E-01
C++	1.3672E-15	6.6364E-08	3.8057E-07
C-	1.3754E-07	5.1984E-06	4.8648E-06
CO	1.3610E-01	1.5195E-04	5.2807E-05
CO+	5.1744E-05	2.9644E-05	2.1888E-05
CO2	1.3555E-06	3.2372E-10	8.1897E-11
C2	5.1269E-05	2.8826E-06	1.2102E-06

 $p_1 = 5.00E+00 \text{ N/SQ-M, } U_{S1} = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3032E+03	2.4599E+04	3.1554E+04
T	2.2318E+01	4.1127E+01	4.4550E+01
RHO	2.1543E+01	1.6712E+02	1.8586E+02
H	-3.4316E+00	-7.4019E+00	-8.5264E+00
A	7.2763E+00	1.1717E+01	1.2573E+01
S	2.4213E+00	2.7230E+00	2.8124E+00
Z	2.7105E+00	3.5789E+00	3.8107E+00
GAME	8.7520E-01	9.3280E-01	9.3114E-01
U	3.1051E+01	4.0083E+00	4.0652E+00

SPECIES	MOLE FRACTIONS		
E-	4.5720E-03	1.6202E-01	2.1292E-01
O	6.2656E-01	5.2129E-01	4.5976E-01
O+	1.2970E-04	3.7375E-02	6.4986E-02
O++	8.5064E-24	2.0338E-11	3.1708E-10
O-	6.4205E-07	2.2550E-05	2.4347E-05
O2	2.2417E-05	4.0153E-06	2.6862E-06
O2+	1.3479E-07	2.2299E-06	2.6302E-06
O2-	3.0237E-11	3.8493E-10	3.3113E-10
C	2.5315E-01	1.9451E-01	1.1430E-01
C+	4.3911E-03	1.2464E-01	1.4794E-01
C++	2.6474E-15	1.3047E-07	6.5673E-07
C-	1.7094E-07	4.9647E-06	4.5161E-06
CO	1.1107E-01	9.9350E-05	3.5829E-05
CO+	5.1872E-05	2.6070E-05	1.9062E-05
CO2	1.0079E-06	1.8221E-10	4.8391E-11
C2	5.1007E-05	2.0153E-06	8.5383E-07

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 9.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3634E+03	2.5834E+04	3.3180E+04
T	2.2719E+01	4.2260E+01	4.5672E+01
RHO	2.1642E+01	1.6695E+02	1.8613E+02
H	-3.6254E+00	-7.7895E+00	-8.9712E+00
A	7.4461E+00	1.2006E+01	1.2881E+01
S	2.4568E+00	2.7601E+00	2.8495E+00
Z	2.7729E+00	3.6615E+00	3.9021E+00
GAME	8.8010E-01	9.3161E-01	9.3076E-01
U	3.1764E+01	4.1235E+00	4.1743E+00

SPECIES	MOLE FRACTIONS		
E-	5.5757E-02	1.8089E-01	2.3154E-01
O	6.3381E-01	4.9974E-01	4.2521E-01
O+	1.6315E-04	4.6357E-02	7.7026E-02
O++	2.6704E-23	5.5466E-11	7.3521E-10
O-	7.5648E-07	2.2716E-05	2.3897E-05
O2	2.0268E-05	3.3720E-06	2.2486E-06
O2+	1.4483E-07	2.3296E-06	2.6686E-06
O2-	3.2583E-11	3.4560E-10	2.9149E-10
C	2.6776E-01	1.3836E-01	1.0153E-01
C+	5.2619E-03	1.3455E-01	1.5452E-01
C++	5.6577E-15	2.3811E-07	1.0743E-06
C-	2.1174E-07	4.6812E-06	1.1600E-06
CO	8.7201E-02	6.5711E-05	2.4742E-05
CO+	5.1419E-05	2.2912E-05	1.6566E-05
CO2	7.0929E-07	1.0622E-10	2.9184E-11
C2	4.9113E-05	1.4253E-06	6.0815E-07

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 9.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4247E+03	2.7012E+04	3.4728E+04
T	2.3188E+01	4.3337E+01	4.6750E+01
RHO	2.1670E+01	1.6643E+02	1.8588E+02
H	-3.8437E+00	-8.1842E+00	-9.4233E+00
A	7.6370E+00	1.2291E+01	1.3186E+01
S	2.4925E+00	2.7953E+00	2.8866E+00
Z	2.8353E+00	3.7453E+00	3.9963E+00
GAME	8.8712E-01	9.3073E-01	9.3064E-01
U	3.2472E+01	4.2341E+00	4.2803E+00

SPECIES	MOLE FRACTIONS		
E-	6.9476E-03	1.9918E-01	2.4946E-01
O	6.4033E-01	4.7774E-01	4.1075E-01
O+	2.1257E-04	5.6173E-02	8.9639E-02
O++	9.6500E-23	1.3717E-10	1.5852E-06
O-	8.9742E-07	2.2607E-05	2.3209E-05
O2	1.8059E-05	2.8413E-06	1.8791E-06
O2+	1.5612E-07	2.4021E-06	2.6708E-06
O2-	3.4624E-11	3.0789E-10	2.5399E-10
C	2.8095E-01	1.2381E-01	9.0252E-02
C+	6.6854E-03	1.4301E-01	1.5983E-01
C++	1.3306E-14	4.0827E-07	1.6880E-06
C-	2.6242E-07	4.3669E-06	3.8055E-06
CO	6.4765E-02	4.5783E-05	1.7334E-05
CO+	5.0226E-05	2.0107E-05	1.4362E-05
CO2	4.6137E-07	6.3675E-11	1.7881E-11
C2	4.5340E-05	1.0180E-06	4.3673E-07

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 9.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4870E+03	2.8092E+04	3.6141E+04
T	2.3764E+01	4.4372E+01	4.7784E+01
RHO	2.1600E+01	1.6525E+02	1.8491E+02
H	-4.0565E+00	-8.5858E+00	-9.8825E+00
A	7.8613E+00	1.2574E+01	1.3488E+01
S	2.5282E+00	2.8311E+00	2.9240E+00
Z	2.8970E+00	3.8311E+00	4.0905E+00
GAME	8.9768E-01	9.3008E-01	9.3077E-01
U	3.3172E+01	4.3402E+00	4.3822E+00

SPECIES	MOLE FRACTIONS		
E-	8.9583E-03	2.1710E-01	2.6673E-01
O	6.4573E-01	4.5512E-01	3.8621E-01
O+	2.9274E-04	6.4845E-02	1.0268E-01
O++	4.2206E-22	3.1534E-10	3.2095E-09
O-	1.0776E-06	2.2228E-05	2.2298E-05
O2	1.5426E-05	2.3892E-06	1.5638E-06
O2+	1.7049E-07	2.4439E-06	2.6362E-06
O2-	3.6105E-11	2.7099E-10	2.1855E-10
C	2.9202E-01	1.1059E-01	8.0279E-02
C+	8.6177E-02	1.5026E-01	1.6405E-01
C++	3.5951E-14	6.6806E-07	2.5504E-06
C-	3.2707E-07	4.0296E-06	3.4564E-06
CO	4.4268E-02	3.1808E-05	1.2278E-05
CO+	4.8053E-05	1.7570E-05	1.2406E-05
CO2	2.6644E-07	3.8659E-11	1.1067E-11
C2	3.9461E-05	7.2937E-07	3.1541E-07

 $P_1 = 5.00E+00 \text{ N/SQ-M}, \quad US_1 = 9.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5502E+03	2.8996E+04	3.7221E+04
T	2.4512E+01	4.5231E+01	4.8769E+01
RHO	2.1392E+01	1.6335E+02	1.8284E+02
H	-4.2738E+00	-8.9920E+00	-1.0347E+01
A	8.1372E+00	1.2846E+01	1.3786E+01
S	2.5636E+00	2.8664E+00	2.9618E+00
Z	2.9564E+00	3.9158E+00	4.1853E+00
GAME	9.1373E-01	9.2564E-01	9.2112E-01
U	3.3822E+01	4.4410E+00	4.4823E+00

SPECIES	MOLE FRACTIONS		
E-	1.2200E-02	2.3403E-01	2.8333E-01
O	6.4928E-01	4.3282E-01	3.4185E-01
O+	4.4179E-04	7.7863E-02	1.1597E-01
O++	2.8014E-21	6.6095E-10	6.1344E-05
O-	1.3223E-06	2.1517E-05	2.1173E-05
O2	1.2452E-05	2.0131E-06	1.2929E-06
O2+	1.8920E-07	2.4523E-06	2.5647E-06
O2-	3.6609E-11	2.3640E-10	1.8511E-10
C	2.9957E-01	9.9047E-02	7.1443E-02
C+	1.1715E-02	1.5617E-01	1.6736E-01
C++	1.2532E-12	1.0337E-06	3.7290E-06
C-	4.1223E-07	3.6520E-06	3.1139E-06
CO	2.6708E-02	2.2586E-05	8.7615E-06
CO+	4.4577E-05	1.5251E-05	1.0668E-05
CO2	1.2884E-07	3.4084E-11	6.8799E-12
C2	3.1487E-05	5.3960E-07	2.2848E-07

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 9.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6140E+02	2.9653E+04	3.8167E+04
T	2.5504E+01	4.6240E+01	4.9699E+01
RHO	2.1012E+01	1.6023E+02	1.7941E+02
H	-4.49F3E+00	-9.4044E+00	-1.0814E+01
A	8.4674E+00	1.3111E+01	1.4078E+01
S	2.5985E+00	2.9025E+00	3.0000E+00
Z	3.0117E+00	4.0023E+00	4.2803E+00
GAME	9.3341E-01	9.2947E-01	9.3168E-01
U	2.4537E+01	4.5359E+00	4.5737E+00

SPECIES	MOLE FRACTIONS		
E-	1.7781E-02	2.5057E-01	2.9924E-01
O	6.4960E-01	4.1021E-01	3.2787E-01
O+	7.4153E-04	8.9453E-02	1.2934E-01
O++	2.9315E-20	1.3072E-09	1.1113E-08
O-	1.6566E-06	2.0748E-05	1.9853E-05
O2	9.3282E-06	1.6839E-06	1.0602E-06
O2+	2.1431E-07	2.4245E-06	2.4575E-06
O2-	3.5666E-11	2.0252E-10	1.5391E-10
C	3.0113E-01	8.8596E-02	6.3604E-02
C+	1.7002E-02	1.6112E-01	1.6990E-01
C++	5.9017E-13	1.5440E-06	5.2898E-06
C-	5.2391E-07	3.3446E-06	2.7796E-06
CO	1.3671E-02	1.6123E-05	6.2846E-06
CO+	3.9663E-05	1.3329E-05	9.1248E-06
CO2	4.9259E-08	1.5014E-11	4.2759E-12
C2	2.2325E-05	3.8395E-07	1.6565E-07

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 1.00E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6785E+03	3.0111E+04	3.8759E+04
T	2.6713E+01	4.7101E+01	5.0596E+01
RHO	2.0515E+01	1.5633E+02	1.7504E+02
H	-4.7213E+00	-9.8203E+00	-1.1288E+01
A	8.7885E+00	1.3379E+01	1.4369E+01
S	2.6325E+00	2.5933E+00	3.0389E+00
Z	3.0628E+00	4.0854E+00	4.3765E+00
GAME	9.4407E-01	9.2936E-01	9.3245E-01
U	3.5200E+01	4.4262E+00	4.6732E+00

SPECIES	MOLE FRACTIONS		
E-	2.4889E-02	2.6653E-01	3.1464E-01
O	6.4542E-01	2.8762E-01	3.1412E-01
O+	1.3385E-03	1.0140E-01	1.4283E-01
O++	4.2630E-19	2.4428E-09	1.9383E-08
O-	2.0729E-06	1.5705E-05	1.8400E-05
O2	6.6188E-06	1.4017E-06	8.6067E-07
O2+	2.4589E-07	2.3660E-06	2.3222E-06
O2-	3.3346E-11	1.7115E-10	1.2568E-10
C	2.9458E-01	7.9258E-02	5.6570E-02
C+	2.5519E-02	1.6514E-01	1.7180E-01
C++	3.3843E-12	2.2314E-06	7.3510E-06
C-	6.5362E-07	3.0062E-06	2.4600E-06
CO	6.1978E-03	1.1603E-05	4.5083E-06
CO+	2.4047E-06	1.1527E-05	7.7336E-06
CO2	1.5887E-08	5.4225E-12	2.4458E-12
C2	1.4775E-05	2.7922E-07	1.1580E-07

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 1.00E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8454E+02	3.1500E+04	4.0540E+04
T	2.9636E+01	4.5218E+01	5.2861E+01
RHO	1.9515E+01	1.4843E+02	1.6600E+02
H	-5.3061E+00	-1.0898E+01	-1.2511E+01
A	9.3847E+00	1.4051E+01	1.5116E+01
S	2.7136E+00	2.0205E+00	3.1352E+00
Z	3.1910E+00	4.3117E+00	4.6200E+00
GAME	9.3132E-01	9.3029E-01	9.3567E-01
U	2.6862E+01	4.6536E+00	4.9043E+00

SPECIES	MOLE FRACTIONS		
E-	4.1063E-02	2.0433E-01	2.5075E-01
O	6.2058E-01	2.7124E-01	2.5634E-01
O+	4.6773E-03	1.3278E-01	1.7654E-01
O++	1.1639E-16	1.0165E-08	7.1280E-08
O-	3.0850E-06	1.4961E-05	1.4814E-05
O2	3.1174E-06	8.7800E-07	4.9730E-07
O2+	3.3039E-07	2.1515E-06	1.9380E-06
O2-	2.6474E-11	1.7052E-10	7.3172E-11
C	2.5574E-01	6.0953E-02	4.2137E-02
C+	6.6256E-02	1.7175E-01	1.7419E-01
C++	1.2583E-10	5.1523E-06	1.5964E-06
C-	8.5741E-07	2.2998E-06	1.7959E-06
CO	1.0689E-02	5.2356E-06	1.9744E-06
CO+	2.3236E-05	7.9588E-06	5.0841E-06
CO2	1.3357E-09	3.0354E-12	7.9036E-13
C2	4.4874E-06	1.2511E-07	5.3927E-08

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 1.10E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0224E+03	3.3591E+04	4.3265E+04
T	3.1951E+01	5.1297E+01	5.5322E+01
RHO	1.8997E+01	1.4395E+02	1.6056E+02
H	-5.9200E+00	-1.2038E+01	-1.3814E+01
A	9.9047E+00	1.4746E+01	1.5927E+01
S	2.7912E+00	3.1203E+00	3.2305E+00
Z	3.3320E+00	4.5403E+00	4.8704E+00
GAME	9.2150E-01	9.3292E-01	9.4124E-01
U	3.8560E+01	5.0959E+00	5.1635E+00

SPECIES	MOLE FRACTIONS		
E-	1.0010E-01	3.3936E-01	3.8413E-01
O	5.8924E-01	2.7574E-01	2.0074E-01
O+	1.0844E-02	1.6470E-01	2.0589E-01
O++	4.9152E-15	3.7501E-08	2.5162E-07
O-	3.7547E-06	1.4223E-05	1.1406E-05
O2	1.8419E-06	5.3738E-07	2.6951E-07
O2+	4.0720E-07	1.8719E-06	1.5220E-06
O2-	2.1572E-11	6.9623E-11	3.9821E-11
C	2.1042E-01	4.5484E-02	3.1015E-02
C+	8.9245E-02	1.7465E-01	1.7418E-01
C++	1.3429E-09	1.1127E-05	3.4265E-05
C-	6.6151E-07	1.7380E-06	1.2865E-06
CO	3.0070E-04	2.4092E-06	8.3891E-07
CO+	1.7058E-05	5.4244E-06	3.2141E-06
CO2	2.3282E-10	9.9221E-13	2.2340E-13
C2	1.8722E-06	6.1249E-08	2.8555E-08

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

P1 = 5.00E+00 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2085E+03	3.4093E+04	4.6597E+04
T	3.3902E+01	5.3662E+01	5.8123E+01
PHO	1.8704E+01	1.4089E+02	1.5641E+02
H	-6.7627E+00	-1.2236E+01	-1.5202E+01
A	1.0406E+01	1.5456E+01	1.6825E+01
S	2.8669E+00	3.2093E+00	3.3275E+00
Z	2.4825E+00	4.7729E+00	5.1255E+00
GAME	9.1723E-01	9.2727E-01	9.5017E-01
U	4.0278E+01	5.2552E+00	5.4708E+00

SPECIES	MOLE FRACTIONS		
E-	1.3880E-01	3.7168E-01	4.1478E-01
O	5.5392E-01	2.2240E-01	1.4828E-01
O+	2.0252E-02	1.9632E-01	2.4191E-01
O++	8.0581E-14	1.2750E-07	8.9876E-07
O-	4.1289E-06	1.1452E-05	8.1441E-06
O2	1.2183E-06	3.1296E-07	1.2004E-07
O2+	4.7653E-07	1.5407E-06	1.0924E-06
O2-	1.7510E-11	4.1322E-11	1.8980E-11
C	1.5836E-01	3.4242E-02	2.2224E-02
C+	1.1854E-01	1.7511E-01	1.7272E-01
C++	7.4742E-09	2.3120E-05	7.5748E-05
C-	5.0915E-07	1.2966E-06	8.7737E-07
CO	1.0884E-04	1.0947E-06	3.2723E-07
CO+	1.2984E-07	3.4974E-06	1.9009E-06
CO2	5.9009E-11	3.1410E-13	5.4157E-14
C2	8.2775E-07	2.8997E-08	9.8923E-09

P1 = 5.00E+00 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6066E+03	4.1784E+04	5.4434E+04
T	3.7265E+01	5.8837E+01	6.5802E+01
PHO	1.8407E+01	1.3540E+02	1.4721E+02
H	-7.9363E+00	-1.5798E+01	-1.8235E+01
A	1.1374E+01	1.7162E+01	1.6125E+01
S	3.0160E+00	3.3855E+00	3.5145E+00
Z	3.8002E+00	5.2449E+00	5.6154E+00
GAME	9.1349E-01	9.5441E-01	9.8916E-01
U	4.3740E+01	5.5542E+00	6.2467E+00

SPECIES	MOLE FRACTIONS		
E-	2.1971E-01	4.2811E-01	4.6621E-01
O	4.7576E-01	1.2559E-01	5.8652E-02
O+	5.0509E-02	2.5572E-01	2.9724E-01
O++	5.1872E-12	1.2979E-04	1.6625E-05
O-	4.2535E-06	6.0991E-06	2.6631E-06
O2	6.0507E-07	7.9731E-08	1.4772E-08
O2+	5.8077E-07	8.2744E-07	3.4715E-07
O2-	1.1206E-11	1.0344E-11	1.8798E-12
C	1.0280E-01	1.8289E-02	9.4565E-03
C+	1.6020E-01	1.7218E-01	1.6789E-01
C++	8.8034E-08	1.0271E-04	5.2680E-04
C-	6.7537E-07	6.3551E-07	2.8980E-07
CO	2.0061E-05	1.2670E-07	2.6580E-08
CO+	7.3730E-06	1.3421E-06	4.3080E-07
CO2	6.2174E-12	2.2073E-14	1.0922E-15
C2	1.8340E-07	5.5915E-09	9.9268E-10

P1 = 5.00E+00 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4033E+03	3.8881E+04	5.0371E+04
T	3.5634E+01	5.6054E+01	6.1450E+01
PHO	1.8541E+01	1.3837E+02	1.5240E+02
H	-7.2342E+00	-1.4491E+01	-1.6670E+01
A	1.0890E+01	1.6299E+01	1.7855E+01
S	2.9405E+00	3.2974E+00	3.4203E+00
Z	2.6377E+00	5.0051E+00	5.3785E+00
GAME	9.1501E-01	9.4412E-01	9.6459E-01
U	4.2007E+01	5.6392E+00	5.8171E+00

SPECIES	MOLE FRACTIONS		
E-	1.7544E-01	4.0119E-01	4.4231E-01
O	5.1651E-01	1.7223E-01	1.0039E-01
O+	3.3258E-02	2.2702E-01	2.7145E-01
O++	7.5731E-12	4.1690E-07	2.4819E-06
O-	4.2764E-06	8.7227E-06	5.1625E-06
O2	8.5225E-07	1.6866E-07	5.1888E-08
O2+	5.3598E-07	1.1847E-06	6.8856E-07
O2-	1.4151E-11	2.2347E-11	7.2626E-12
C	1.3256E-01	2.5422E-02	1.5176E-02
C+	1.4217E-01	1.7407E-01	1.7048E-01
C++	2.8555E-08	4.7759E-05	1.8216E-04
C-	8.0198E-07	9.3628E-07	5.4781E-07
CO	4.5272E-06	4.7607E-07	1.0875E-07
CO+	9.7018E-06	2.2841E-06	9.9942E-07
CO2	1.8319E-11	9.1217E-14	9.9632E-15
C2	2.8635E-07	1.2295E-08	3.5855E-09

P1 = 5.00E+00 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.8184E+03	4.4851E+04	5.8963E+04
T	3.8784E+01	6.2104E+01	7.2135E+01
PHO	1.8330E+01	1.3197E+02	1.4033E+02
H	-8.6631E+00	-1.7157E+01	-1.9923E+01
A	1.1846E+01	1.8162E+01	2.0729E+01
S	3.0902E+00	3.4719E+00	3.6076E+00
Z	3.9645E+00	5.4723E+00	5.8249E+00
GAME	9.1252E-01	9.7057E-01	1.0227E+00
U	4.5475E+01	6.2250E+00	6.8209E+00

SPECIES	MOLE FRACTIONS		
E-	2.4248E-01	4.5186E-01	4.8505E-01
O	4.3324E-01	8.2985E-02	2.7046E-02
O+	7.1140E-02	2.8148E-01	3.1619E-01
O++	2.6735E-11	5.1192E-06	1.1601E-04
O-	4.1008E-06	3.7770E-06	9.8177E-07
O2	4.3432E-07	3.1054E-08	2.4167E-09
O2+	6.0429E-07	5.0629E-07	1.2558E-07
O2-	8.7599E-12	3.8182E-12	2.5628E-13
C	7.5761E-02	1.2525E-02	5.0688E-03
C+	1.7222E-01	1.6989E-01	1.6443E-01
C++	2.2587E-07	2.4156E-04	2.0983E-03
C-	5.5771E-07	3.9328E-07	1.1574E-07
CO	5.5069E-06	6.2013E-08	3.8758E-09
CO+	5.5407E-06	7.0028E-07	1.3082E-07
CO2	2.3045E-12	4.0148E-15	5.0315E-17
C2	9.0727E-08	2.0411E-09	1.7224E-10

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 1.3E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0390E+02	4.7584E+04	6.387E+C4
T	4.0228E+01	5.6219E+01	8.0211E+01
PHO	1.8278E+01	1.2739E+02	1.3318E+C2
H	-9.4204E+00	-1.8565E+01	-2.1721E+C1
A	1.2315E+01	1.9272E+01	2.2003E+C1
S	2.1643E+00	3.5561E+00	3.6963E+00
Z	4.1330E+00	5.6797E+00	5.9771E+00
GAMF	9.1221E-01	9.9633E-01	1.0098E+00
U	4.7220E+01	6.7839E+00	7.4917E+C0

SPECIES	MOLE FRACTIONS		
E-	2.7427E-01	4.7188E-01	4.9816E-01
O	2.8579E-01	4.9050E-02	1.1119E-02
O+	9.4505E-02	3.0204E-01	3.2261E-01
O++	1.1187E-10	2.2675E-05	8.7587E-04
O-	3.8732E-06	1.5299E-06	3.0006E-07
O2	2.1072E-07	8.8441E-09	2.9714E-10
O2+	6.3375E-07	2.5249E-07	3.5780E-C8
O2-	6.7164E-12	9.7864E-13	2.4805E-14
C	6.2051E-02	7.8885E-02	2.5356E-03
C+	1.7975E-01	1.6743E-01	1.5561E-01
C++	5.0956E-07	6.7319E-04	9.0902E-03
C-	4.5500E-07	2.0841E-07	3.8786E-08
CO	4.7107E-05	1.5503E-08	4.3924E-10
CO+	4.1406E-04	3.0382E-07	3.2375E-C8
CO2	9.9895E-12	4.5165E-15	1.5008E-18
C2	4.6438E-08	5.8010E-10	2.2781E-11

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 1.45E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5049E+03	5.4248E+04	7.3778E+04
T	4.2582E+01	7.9841E+01	9.2083E+01
PHO	1.8202E+01	1.1520E+02	1.2786E+02
H	-1.1021E+01	-2.1519E+01	-2.5263E+01
A	1.3265E+01	2.1832E+01	2.3455E+01
S	2.3130E+00	2.7127E+00	3.8530E+C0
Z	4.4798E+00	5.9728E+00	6.2646E+00
GAMF	9.1356E-01	1.0122E+00	9.5336E-01
U	6.0706E+01	8.0146E+00	8.4165E+00

SPECIES	MOLE FRACTIONS		
E-	3.3042E-01	4.9779E-01	5.2123E-01
O	3.0100E-01	1.1074E-02	2.9252E-03
O+	1.4545E-01	3.2303E-01	2.0709E-01
O++	1.2507E-09	7.4637E-04	8.1446E-03
O-	3.1681E-C6	2.7111E-C7	7.4351E-C8
O2	1.5246E-C7	2.6745E-10	2.4814E-11
O2+	5.3566E-07	3.2596E-08	7.8318E-C9
O2-	2.6588E-12	2.0047E-14	1.6026E-15
C	3.8153E-02	2.4292E-02	1.0100E-03
C+	1.8475E-01	1.5688E-01	1.1905E-01
C++	2.0072E-06	8.2463E-03	3.9446E-02
C-	2.9920E-07	3.4325E-08	9.2787E-09
CO	1.2543E-C4	3.9703E-10	3.0065E-11
CO+	2.2619E-C4	2.0035E-08	5.1032E-09
CO2	1.4956E-13	1.2502E-18	2.1706E-20
C2	1.3210E-C8	2.0022E-11	1.5474E-12

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2678E+C3	5.1103E+04	6.8812E+04
T	4.1619E+01	7.7044E+01	8.6959E+C1
PHO	1.8240E+01	1.2131E+02	1.2926E+02
H	-1.0207E+01	-2.0019E+01	-2.3538E+01
A	1.2787E+01	2.0780E+01	2.2743E+C1
S	3.2386E+00	3.6269E+00	3.7772E+C0
Z	4.3047E+00	5.8475E+00	6.1170E+00
GAMF	9.1267E-01	1.0250E+00	9.7243E-01
U	4.8963E+01	7.2712E+00	8.0260E+00

SPECIES	MOLE FRACTIONS		
E-	3.0319E-01	4.8704E-01	5.0963E-01
O	3.4503E-01	2.3968E-02	5.9307E-03
O+	1.1957E-01	3.1793E-01	3.1758E-01
O++	2.9748E-10	1.2053E-04	3.4465E-03
O-	2.5360E-06	7.6079E-07	1.2879E-07
O2	2.1977E-07	1.6528E-09	6.6590E-11
O2+	5.7977E-07	9.5958E-08	1.4482E-08
O2-	5.0296E-12	1.5323E-13	4.7182E-15
C	4.8581E-C2	4.4449E-03	1.4985E-03
C+	1.8762E-01	1.6413E-01	1.3866E-01
C++	1.0456E-C6	2.3584E-03	2.3246E-02
C-	3.7017E-07	8.8843E-08	1.6858E-08
CO	2.4114E-06	2.6222E-09	8.9932E-11
CO+	2.0747E-06	1.0095E-07	1.1123E-08
CO2	3.6262E-13	2.6416E-17	1.1878E-19
C2	2.4506E-08	1.1575E-10	4.8284E-12

 $P_1 = 5.00E+00 \text{ N/SC-M}, \quad US_1 = 1.50E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7501E+03	5.7565E+04	7.8750E+04
T	4.4344E+01	8.4878E+01	9.6320E+01
PHO	1.8155E+01	1.1130E+02	1.2729E+02
H	-1.1864E+01	-2.0765E+01	-2.7212E+C1
A	1.3755E+01	2.2676E+01	2.4165E+01
S	3.2876E+00	3.7855E+00	3.9206E+00
Z	4.6581E+00	6.0525E+00	6.4228E+00
GAMF	9.1812E-01	9.7671E-01	9.4350E-C1
U	5.2446E+C1	8.5597E+00	8.7170E+C0

SPECIES	MOLE FRACTIONS		
E-	3.5605E-01	5.0775E-01	5.3299E-01
O	2.5791E-01	6.1173E-02	2.8792E-03
O+	1.7144E-01	3.1940E-01	2.9354E-01
O++	3.6202E-09	2.6988E-03	1.4572E-02
O-	2.7647E-06	1.2180E-07	4.9517E-C8
O2	1.0274E-07	6.5201E-11	1.1804E-11
O2+	4.7604E-07	1.3899E-08	4.8578E-C9
O2-	2.5546E-12	4.1639E-15	7.2046E-16
C	2.9973E-02	1.4842E-02	7.2324E-04
C+	1.8461E-01	1.4216E-01	1.0030E-01
C++	3.6935E-06	2.0395E-02	5.4602E-02
C-	2.3970E-C7	1.5737E-08	5.7712E-09
CO	6.5499E-C7	8.9428E-11	1.2720E-11
CO+	1.6405E-06	1.1091E-08	2.6896E-09
CO2	6.0505E-14	1.1477E-19	5.6731E-21
C2	7.1783E-09	4.7176E-12	6.0687E-13

TABLE I.- Continued

$$p_1 = 5 \text{ N/m}^2$$

 $p_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 1.5E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.0034E+03	6.1C79E+04	8.3762E+04
T	4.5734E+01	8.9604E+01	1.0010E+02
RHD	1.8989E+01	1.0953E+02	1.2707E+02
H	-1.2734E+01	-2.4654E+01	-2.9119E+01
A	1.4264E+01	2.3094E+01	2.4872E+01
S	3.6524E+00	3.8543E+00	3.9985E+00
Z	4.9391E+00	5.2237E+00	6.5854E+00
GAME	9.1932E-01	9.5435E-01	9.3849E-01
U	5.4182E+01	8.9625E+00	9.0093E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.8215E-01	5.1805E-01	5.4451E-01
O	2.1674E-01	4.0805E-03	2.2163E-03
O+	1.9703E-01	3.1094E-01	2.7749E-01
O++	9.0223E-09	6.3053E-03	2.3995E-02
O-	2.3350E-06	7.0949E-08	3.5293E-08
O2-	6.6526E-08	2.4914E-11	6.3030E-12
O2+	4.0578E-07	7.4460E-09	3.1995E-09
O2-	1.7002E-12	1.4404E-15	3.6981E-16
C	2.3447E-02	1.9182E-03	5.3239E-04
C+	1.8310E-01	1.2470E-01	8.3478E-02
C++	6.4451E-06	2.4884E-02	6.7774E-02
C-	1.8928E-07	8.8632E-09	3.7434E-09
CO	3.2790E-07	3.0941E-11	6.0263E-12
CO+	1.1552E-06	5.2672E-09	1.5107E-09
CO2	2.3719E-14	2.1554E-20	1.8278E-21
C2	3.8809E-09	1.5910E-12	2.6262E-13

 $p_1 = 5.00E+00 \text{ N/SC-M}, \quad U_1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2644E+03	6.4671E+04	8.8706E+04
T	4.7157E+01	9.3654E+01	1.0257E+02
PHO	1.7992E+01	1.0845E+02	1.2684E+02
H	-1.3424E+01	-2.4357E+01	-3.1068E+01
A	1.4757E+01	2.3744E+01	2.5574E+01
S	3.5272E+00	3.9238E+00	4.0709E+00
Z	5.0220E+00	6.3669E+00	6.7523E+00
GAME	9.2780E-01	9.4444E-01	9.3522E-01
U	5.5913E+01	9.2850E+00	9.2683E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.0272E-01	5.2888E-01	5.5577E-01
O	1.7641E-01	2.9741E-03	1.7496E-03
O+	2.2182E-01	2.9931E-01	2.5924E-01
O++	2.4582E-08	1.1843E-02	3.5088E-02
O-	1.9039E-06	4.4744E-08	2.6048E-08
O2-	4.0738E-08	1.1641E-11	3.5759E-12
O2+	3.2971E-07	4.7244E-09	2.1648E-09
O2-	1.0572E-12	6.3359E-16	2.0344E-16
C	1.8150E-02	7.3136E-04	3.9847E-04
C+	1.9087E-01	1.0644E-01	6.9027E-02
C++	1.1956E-05	4.9623E-02	7.8607E-02
C-	1.4514E-07	5.4702E-09	2.5278E-09
CO	1.6805E-07	1.3006E-11	3.0447E-12
CO+	7.9051E-07	2.7506E-09	8.7832E-10
CO2	8.7080E-15	5.6279E-21	6.5519E-22
C2	2.0450E-09	6.2757E-13	1.2074E-13

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/50-M. US1 = 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0724E+00
RMD	6.1029E+00	1.9532E+01	2.7601E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9262E+00
S	1.3648E+00	1.0763E+00	1.0929E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1108E-01
U	3.3950E+00	9.6609E-01	8.7892E-01

SPECIES	MOLE FRACTIONS		
E-	1.5208E-49	4.5384E-40	1.6346E-31
O-	2.3031E-13	1.4726E-10	8.6279E-09
O+	1.4189E-36	9.4608E-33	6.5378E-30
O++	0.	0.	0.
D-	6.6141E-57	2.0117E-46	4.2771E-37
D2	4.3992E-04	4.3999E-04	4.4710E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
D2-	3.0357E-51	4.9664E-42	3.9002E-34
C-	7.4628E-51	6.5522E-42	6.3734E-34
C+	4.1170E-61	9.3444E-53	2.3627E-45
C++	0.	0.	0.
C-	1.0724E-95	9.7166E-79	6.5070E-63
CO	1.6158E-10	1.5553E-07	1.4387E-05
CO+	2.3571E-35	5.1619E-31	1.0825E-27
CO2	9.9956E-01	9.9956E-01	9.9954E-01
C2	4.5771E-75	3.9751E-62	2.9452E-50

P1 = 1.00E+01 N/50-M. US1 = 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1279E+01	1.9517E+02	2.8981E+02
T	3.8891E+00	5.6006E+00	6.2357E+00
RMD	8.0420E+00	3.4744E+01	4.5968E+01
H	8.8932E-01	8.0771E-01	7.6649E-01
A	1.8838E+00	2.2296E+00	2.3387E+00
S	1.1706E+00	1.1442E+00	1.1633E+00
Z	1.0000E+00	1.0032E+00	1.0114E+00
GAME	9.1244E-01	8.8481E-01	8.6732E-01
U	4.5382E+00	1.0512E+00	9.6262E-01

SPECIES	MOLE FRACTIONS		
E-	1.4495E-32	6.1765E-18	2.3539E-16
O-	5.0959E-09	1.3915E-05	1.4118E-04
O+	2.1126E-30	2.5435E-24	1.6362E-21
O++	0.	0.	2.1362E-90
D-	1.6720E-38	1.6562E-21	3.8866E-19
D2	4.4369E-04	3.6397E-03	1.1580E-02
O2+	1.7597E-18	4.4391E-18	2.3526E-16
O2-	1.2439E-35	1.5041E-20	1.2605E-18
C-	6.5818E-35	7.2472E-22	2.8709E-19
C+	2.8629E-46	1.4148E-33	1.1873E-29
C++	0.	3.1301E-82	3.2579E-73
C-	7.5584E-65	5.6190E-38	1.1638E-33
CO	7.5626E-06	6.4163E-03	2.2431E-02
CO+	2.7755E-28	1.2545E-22	3.6617E-20
CO2	9.9955E-01	9.8993E-01	9.6585E-01
C2	1.0224E-51	8.3132E-33	4.2246E-29

P1 = 1.00E+01 N/50-M. US1 = 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7846E+01	1.2172E+02	1.9013E+02
T	3.1957E+00	4.5011E+00	5.2224E+00
RMD	7.1505E+00	2.7044E+01	3.6358E+01
H	9.1903E-01	8.6219E-01	8.2799E-01
A	1.7137E+00	2.0209E+00	2.1638E+00
S	1.0926E+00	1.1102E+00	1.1284E+00
Z	1.0000E+00	1.0001E+00	1.0012E+00
GAME	9.1904E-01	9.0727E-01	8.9539E-01
U	3.8201E+00	1.0094E+00	9.3543E-01

SPECIES	MOLE FRACTIONS		
E-	1.2358E-39	9.6737E-24	4.8793E-20
O-	2.1341E-11	4.0315E-08	2.9823E-06
O+	4.8834E-33	1.9889E-29	1.4565E-26
O++	0.	0.	0.
D-	3.5197E-46	1.4700E-28	2.4516E-24
D2	4.3990E-04	5.0951E-04	1.6048E-03
O2+	1.7597E-18	1.7595E-18	1.8065E-18
O2-	4.0102E-42	8.9550E-27	7.2212E-23
C-	1.6453E-41	1.9609E-27	1.3127E-24
C+	2.1547E-57	8.9322E-40	2.1445E-37
C++	0.	0.	0.
C-	7.8407E-78	4.3528E-49	6.0110E-43
CO	3.7185E-08	1.3928E-04	2.3339E-03
CO+	3.2297E-31	1.5754E-26	2.4023E-24
CO2	9.9956E-01	9.9935E-01	9.9606E-01
C2	1.7860E-61	1.0938E-40	8.8220E-37

P1 = 1.00E+01 N/50-M. US1 = 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1033E+01	2.9119E+02	4.1129E+02
T	4.6537E+00	6.4974E+00	6.9735E+00
RMD	8.8157E+00	4.4013E+01	5.6955E+01
H	8.5507E-01	7.4428E-01	6.9735E-01
A	2.0513E+00	2.3856E+00	2.4812E+00
S	1.1482E+00	1.1786E+00	1.1991E+00
Z	1.0003E+00	1.0183E+00	1.0355E+00
GAME	9.0393E-01	8.6018E-01	8.5256E-01
U	5.2502E+00	1.0532E+00	9.6170E-01

SPECIES	MOLE FRACTIONS		
E-	3.5597E-22	1.8837E-15	3.3361E-14
O-	7.9697E-07	3.5326E-04	1.1900E-03
O+	7.1477E-23	1.3280E-22	9.7049E-20
O++	0.	1.0172E-89	1.6471E-86
D-	5.0788E-27	5.2845E-19	2.9778E-17
D2	7.0323E-04	1.8093E-02	3.3472E-02
O2+	1.7588E-18	1.8917E-15	3.3550E-14
O2-	1.5286E-25	5.8212E-18	1.5995E-16
C-	1.7418E-26	1.6489E-19	1.8625E-17
C+	3.1010E-39	1.2500E-29	1.0749E-27
C++	0.	1.1818E-72	6.6054E-70
C-	7.5028E-47	1.4296E-33	1.5325E-31
CO	5.7715E-04	3.5674E-02	6.7284E-02
CO+	1.8775E-25	3.4257E-20	2.4137E-18
CO2	9.8977E-01	9.4588E-01	8.9805E-01
C2	1.7542E-39	3.3129E-29	4.0876E-27

TABLE I.-Continued

$$p_1 = 10 \text{ N/m}^2$$

 $p_1 = 1.00\text{E}+01 \text{ N/50-M.} \quad U_1 = 1.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2194E+01	4.1631E+02	5.6309E+02
T	5.4166E+02	7.1683E+00	7.5503E+00
RHO	9.6750E+00	5.5469E+01	5.9641E+01
H	8.1620E-31	6.7154E-01	6.1941E-01
A	2.1919E+00	2.5258E+00	2.6184E+00
S	1.1752E+00	1.2147E+00	1.2367E+00
Z	1.0032E+00	1.0470E+00	1.0709E+00
GAME	8.8414E-01	8.4999E-01	8.4793E-01
U	5.9679E+00	1.0353E+00	9.5305E-01

SPECIES ----- MOLE FRACTIONS -----

F-	1.0941E-18	9.2018E-14	5.4165E-13
O	1.6417E-05	2.0053E-03	4.2604E-03
O+	1.0790E-25	3.7947E-19	5.8416E-18
O++	0.	1.7596E-82	6.8018E-79
N-	4.1053E-23	9.9316E-17	1.0299E-15
N2	3.5961E-03	4.3341E-02	6.2312E-02
N2+	2.8489E-18	9.2572E-14	5.4614E-13
N2+	6.7902E-22	4.6170E-16	3.5581E-15
C	2.1748E-23	4.6170E-17	8.4968E-16
C+	4.8634E-36	4.7257E-27	3.1747E-25
C++	2.7215E-88	7.4414E-67	7.7763E-64
C-	3.7942E-41	6.4877E-31	7.6598E-29
CO	5.3315E-03	8.7846E-02	1.2806E-01
CO+	8.5106E-24	8.3992E-18	9.1664E-17
CO2	9.9006E-01	8.6681E-01	8.9536E-01
C2	1.7234E-35	1.8538E-26	8.5526E-25

 $p_1 = 1.00\text{E}+01 \text{ N/50-M.} \quad U_1 = 2.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4872E+01	5.8330E+02	7.6353E+02
T	6.0535E+00	7.7234E+00	8.0589E+00
RHO	1.0577E+01	6.9510E+01	8.4908E+01
H	7.7765E-01	5.8897E-01	5.3113E-01
A	2.3001E+00	2.6662E+00	2.7606E+00
S	1.2023E+00	1.2532E+00	1.2769E+00
Z	1.0130E+00	1.0864E+00	1.1159E+00
GAME	8.6771E-01	8.4720E-01	8.4746E-01
U	6.7012E+00	1.0217E+00	9.5270E-01

SPECIES ----- MOLE FRACTIONS -----

E-	3.1150E-16	1.1904E-12	4.2033E-12
O-	2.0353E-04	6.1706E-03	1.0577E-02
O+	1.2778E-22	1.8623E-17	1.1123E-16
O++	1.5440E-98	7.9473E-78	3.8361E-73
O-	4.0289E-20	2.7080E-15	1.3771E-14
N2	1.3034E-02	7.3778E-02	9.3657E-02
N2+	3.1358E-16	1.2009E-12	4.2505E-12
N2+	3.0780E-19	8.0980E-15	3.4851E-14
C+	2.5258E-20	2.4700E-15	1.3733E-14
C+	8.3166E-32	1.4713E-24	1.4483E-23
C++	1.3408E-79	8.3784E-63	3.0289E-59
C-	1.6778E-36	3.8396E-28	4.9088E-27
CO	2.5403E-02	1.5292E-01	1.9710E-01
CO+	4.6441E-21	2.5506E-16	1.3178E-15
CO2	9.6136E-01	7.6713E-01	6.9866E-01
C2	2.1773E-31	3.5589E-24	3.6330E-23

 $p_1 = 1.00\text{E}+01 \text{ N/50-M.} \quad U_1 = 2.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.9069E+01	8.0166E+02	1.0240E+03
T	6.5441E+00	8.2217E+00	8.5375E+00
RHO	1.1722E+01	8.5914E+01	1.0257E+02
H	7.2445E-01	4.9660E-01	4.3237E-01
A	2.3954E+00	2.8121E+00	2.9115E+00
S	1.2301E+00	1.2940E+00	1.3197E+00
Z	1.0305E+00	1.1347E+00	1.1695E+00
GAME	8.5079E-01	8.4764E-01	8.4902E-01
U	7.4461E+00	1.0178E+00	9.6042E-01

SPECIES ----- MOLE FRACTIONS -----

F-	7.7970E-15	8.2748E-12	2.2376E-11
O	9.6655E-04	1.4039E-02	2.1453E-02
O+	1.3711E-20	3.5945E-16	1.2984E-15
O++	1.2936E-90	4.5245E-72	2.7334E-68
O-	2.3105E-18	3.2696E-14	1.1538E-13
N2	2.9078E-02	1.0507E-01	1.2384E-01
N2+	7.8113E-15	8.3731E-12	2.2699E-11
N2+	1.0611E-17	6.9390E-14	2.2014E-13
C	1.9784E-18	3.8139E-14	1.3836E-13
C+	5.0719E-29	1.0164E-22	3.2265E-22
C++	3.7421E-73	3.5469E-58	3.2385E-55
C-	1.7967E-33	3.8435E-26	1.5469E-25
CO	5.8269E-02	2.2340E-01	2.6838E-01
CO+	2.9458E-19	3.4464E-15	1.2011E-14
CO2	9.1169E-01	6.5749E-01	5.8633E-01
C2	8.8506E-29	1.8227E-22	8.5039E-22

 $p_1 = 1.00\text{E}+01 \text{ N/50-M.} \quad U_1 = 2.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4728E+01	1.0748E+03	1.3482E+03
T	6.9367E+00	8.6939E+00	9.0042E+00
RHO	1.2951E+01	1.0383E+02	1.2164E+02
H	6.7164E-01	3.9482E-01	3.2342E-01
A	2.4870E+00	2.9656E+00	3.0728E+00
S	1.2592E+00	1.3372E+00	1.3649E+00
Z	1.0544E+00	1.1909E+00	1.2310E+00
GAME	8.4562E-01	8.4972E-01	8.5182E-01
U	8.1947E+00	1.0239E+00	9.7634E-01

SPECIES ----- MOLE FRACTIONS -----

E-	6.7835E-14	3.9549E-11	9.3858E-11
O	2.7822E-03	2.6863E-02	3.8349E-02
O+	2.7207E-19	3.8332E-15	1.1459E-14
O++	4.7405E-85	7.0900E-68	2.3046E-64
O-	3.3311E-17	2.3774E-13	7.0881E-13
N2	4.9265E-02	1.3380E-01	1.4967E-01
N2+	6.7980E-14	4.0136E-11	9.5499E-11
N2+	1.1431E-16	3.8178E-13	1.0262E-12
C	3.3596E-17	3.4346E-13	1.0469E-12
C+	2.2512E-27	2.8255E-21	5.8982E-21
C++	5.9278E-69	9.1961E-55	5.5262E-52
C-	1.0533E-31	1.3722E-24	4.0962E-24
CO	1.0048E-01	2.9373E-01	3.3697E-01
CO+	4.4625E-18	2.8087E-14	8.2995E-14
CO2	8.4747E-01	5.4560E-01	4.7501E-01
C2	3.4915E-27	4.0651E-21	1.4670E-20

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/50-M. US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1180E+02	1.4033E+03	1.7366E+03
T	7.2727E+00	9.1488E+00	9.4711E+00
RHO	1.4191E+01	1.2226E+02	1.4105E+02
M	6.1425E-01	2.8390E-01	2.0444E-01
A	2.5782E+00	3.1283E+00	3.2457E+00
S	1.2896E+00	1.3826E+00	1.4123E+00
Z	1.0834E+00	1.2543E+00	1.3001E+00
GAME	9.4358E-01	8.5283E-01	8.5553E-01
U	8.9424E+00	1.0395E+00	1.0006E+00

SPECIES	MOLE FRACTIONS		
E-	3.4158E-13	1.5206E-10	3.3435E-10
n	6.1037E-03	4.6027E-02	6.2901E-02
n+	9.1829E-19	3.0418E-14	8.3851E-14
O++	2.7390E-78	1.9575E-64	6.1154E-61
O-	2.2538E-16	1.2869E-12	3.4652E-12
O2	7.1320E-02	1.5706E-01	1.6827E-01
O2+	3.4247E-13	1.5472E-10	3.4105E-10
O2-	6.8660E-16	1.5822E-12	3.7961E-12
C	1.9902E-16	2.3320E-12	6.5127E-12
C+	2.2950E-25	5.1718E-20	1.0097E-19
C++	3.4657E-63	6.4051E-52	3.6876E-49
C-	1.8538E-29	2.9837E-23	9.0082E-23
CO	1.4793E-01	3.5945E-01	3.9876E-01
CO+	2.7322E-17	1.7515E-13	4.7543E-13
CO2	7.7464E-01	4.3746E-01	3.7007E-01
C2	1.0116E-25	6.0283E-20	2.0022E-19

P1 = 1.00E+01 N/50-M. US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3027E+02	1.7861E+03	2.1884E+03
T	7.5772E+00	9.6065E+00	9.9477E+00
RHO	1.5392E+01	1.4035E+02	1.5983E+02
M	5.5228E-01	1.6404E-01	7.5648E-02
A	2.6709E+00	3.3016E+00	3.4317E+00
S	1.3215E+00	1.4300E+00	1.4619E+00
Z	1.1168E+00	1.3245E+00	1.3765E+00
GAME	8.4305E-01	8.5673E-01	8.6004E-01
U	9.6872E+00	1.0639E+00	1.0310E+00

SPECIES	MOLE FRACTIONS		
E-	1.5781E-12	4.9954E-10	1.0574E-09
n	1.1371E-02	7.3007E-02	9.6729E-02
O+	3.2785E-17	1.9345E-13	5.3863E-13
O++	8.9470E-78	1.7416E-61	7.6502E-58
O-	1.8181E-15	5.5272E-12	1.4162E-11
O2	9.3566E-02	1.7233E-01	1.7708E-01
O2+	1.5831E-12	5.0929E-10	1.0802E-09
O2-	3.4931E-15	5.2723E-12	1.1606E-11
C	2.7502E-15	1.2865E-11	3.5386E-11
C+	2.1180E-24	6.8701E-19	1.5973E-18
C++	1.1547E-62	1.8385E-49	1.3646E-46
C-	1.7511E-28	4.4291E-22	1.5652E-21
CO	1.9771E-01	4.1701E-01	4.5024E-01
CO+	2.9253E-16	8.9824E-13	2.3937E-12
CO2	6.9735E-01	3.3765E-01	2.7595E-01
C2	1.8641E-24	6.5530E-19	2.2699E-18

P1 = 1.00E+01 N/50-M. US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5012E+02	2.2260E+03	2.7081E+03
T	7.8548E+00	1.0074E+01	1.0445E+01
RHO	1.6559E+01	1.5769E+02	1.7758E+02
M	4.8574E-01	3.5219E-02	-6.3360E-02
A	2.7657E+00	3.4871E+00	3.6328E+00
S	1.3548E+00	1.4789E+00	1.5132E+00
Z	1.1543E+00	1.4013E+00	1.4601E+00
GAME	8.4365E-01	8.6136E-01	8.6532E-01
U	1.3430E+01	1.0968E+00	1.0708E+00

SPECIES	MOLE FRACTIONS		
E-	4.6464E-12	1.4467E-09	3.0654E-09
n	1.9009E-02	1.0924E-01	1.4119E-01
n+	1.0710E-16	9.6534E-13	3.1884E-12
O++	5.8897E-73	2.7800E-56	5.7007E-55
O-	6.6227E-15	2.0134E-11	5.0153E-11
O2	1.1503E-01	1.7747E-01	1.7421E-01
O2+	4.6633E-12	1.4768E-09	3.1314E-09
O2-	1.1417E-14	1.4767E-11	3.0120E-11
C	9.8538E-15	5.8151E-11	1.7705E-10
C+	7.4158E-24	4.5413E-18	2.3890E-17
C++	8.3511E-59	2.2009E-45	3.4142E-44
C-	7.3600E-28	3.9038E-21	2.2335E-20
CO	2.4831E-01	4.6354E-01	4.8901E-01
CO+	1.3327E-15	3.8126E-12	1.1148E-11
CO2	6.1765E-01	2.4976E-01	1.9559E-01
C2	3.1544E-24	4.8132E-18	2.2823E-17

P1 = 1.00E+01 N/50-M. US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7133E+02	2.7166E+03	3.2895E+03
T	8.1230E+00	1.0560E+01	1.0972E+01
RHO	1.7641E+01	1.7331E+02	1.9333E+02
M	4.1463E-01	-1.0237E-01	-2.1255E-01
A	2.8641E+00	3.6859E+00	3.8509E+00
S	1.3895E+00	1.5294E+00	1.5661E+00
Z	1.1955E+00	1.4845E+00	1.5508E+00
GAME	8.4474E-01	8.6667E-01	8.7148E-01
U	1.1169E+01	1.1383E+00	1.1199E+00

SPECIES	MOLE FRACTIONS		
E-	1.4014E-11	3.8701E-09	8.2761E-09
n	2.9517E-02	1.5559E-01	1.9649E-01
n+	8.7782E-16	3.9905E-12	1.7885E-11
O++	2.0000E-72	2.2846E-53	2.8639E-52
O-	2.7533E-14	6.4472E-11	1.5598E-10
O2	1.3438E-01	1.7105E-01	1.5895E-01
O2+	1.4071E-11	3.9517E-09	8.4309E-09
O2-	3.4948E-14	3.5610E-11	6.6575E-11
C	5.7204E-14	2.2842E-10	8.4559E-10
C+	1.9720E-22	2.8281E-17	3.4381E-16
C++	2.9397E-58	8.7837E-43	6.4146E-42
C-	2.1415E-26	1.6206E-20	2.7150E-19
CO	2.9755E-01	4.9711E-01	5.1382E-01
CO+	5.2953E-15	1.4471E-11	4.9845E-11
CO2	5.3855E-01	1.7624E-01	1.3074E-01
C2	1.2317E-22	2.0740E-17	2.1375E-16

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/50-M. US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9392E+02	3.2599E+03	3.9374E+03
T	8.3794E+00	1.1075E+01	1.1547E+01
RHO	1.8658E+01	1.8704E+02	2.0688E+02
H	3.3895E-01	-2.4878E-01	-3.7231E-01
A	2.9661E+00	3.9004E+00	4.0902E+00
S	1.4255E+00	1.5810E+00	1.6203E+00
Z	1.2405E+00	1.5738E+00	1.6483E+00
GAME	8.4636E-01	8.7285E-01	8.7898E-01
U	1.1906E+01	1.1891E+00	1.1794E+00

SPECIES	MOLE FRACTIONS		
E-	3.3081E-11	1.0087E-08	2.1258E-08
O	4.3382E-02	2.1145E-01	2.6133E-01
O+	2.5161E-15	2.6266E-11	9.9813E-11
O++	2.4865E-68	5.8775E-52	9.2432E-50
N-	7.7616E-14	1.8863E-10	4.3314E-10
O2	1.5084E-01	1.5340E-01	1.3222E-01
O2+	3.3277E-11	1.0254E-08	2.1491E-08
O2+	8.6563E-14	7.3153E-11	1.2537E-10
C	1.6708E-13	1.1806E-09	4.0891E-09
C+	1.1354E-22	6.8553E-16	5.2966E-15
C++	5.2884E-55	1.0922E-41	8.2238E-40
C-	3.1065E-26	4.5317E-19	3.0623E-18
CO	3.4435E-01	5.1770E-01	5.2525E-01
CO+	1.5093E-14	6.8558E-11	2.2554E-10
CO2	4.6143E-01	1.1745E-01	8.1196E-02
C2	3.4526E-22	3.4520E-16	2.0548E-15

P1 = 1.00E+01 N/50-M. US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1786E+02	3.8462E+03	4.6433E+03
T	8.6352E+00	1.1635E+01	1.2206E+01
RHO	1.9570E+01	1.9812E+02	2.1720E+02
H	2.5870E-01	-4.0383E-01	-5.4294E-01
A	3.3728E+00	4.1342E+00	4.3602E+00
S	1.4629E+00	1.6334E+00	1.6756E+00
Z	1.2890E+00	1.6684E+00	1.7514E+00
GAME	8.4829E-01	8.8046E-01	8.8934E-01
U	1.2640E+01	1.2503E+00	1.2522E+00

SPECIES	MOLE FRACTIONS		
F-	8.0477E-11	2.4968E-08	5.3779E-08
O	6.1123E-02	2.7510E-01	3.3265E-01
O+	1.3214E-14	1.5027E-10	6.0450E-10
O++	8.0562E-68	1.5182E-49	2.0349E-47
N-	2.3342E-13	4.9109E-10	1.0937E-09
O2	1.6345E-01	1.2583E-01	9.6637E-02
O2+	8.0797E-11	2.5122E-08	5.3330E-08
O2+	2.0097E-13	1.2828E-10	1.9767E-10
C	6.8453E-13	5.8354E-09	2.2211E-08
C+	8.7880E-21	1.2905E-14	1.0614E-13
C++	1.8131E-54	1.8951E-39	1.3375E-37
C-	1.2846E-24	5.3570E-18	3.6518E-17
CO	3.8734E-01	5.2623E-01	5.2543E-01
CO+	5.6613E-14	3.1507E-10	1.1357E-09
CO2	3.8808E-01	7.2850E-02	4.5284E-02
C2	3.8373E-21	3.6579E-15	2.3885E-14

P1 = 1.00E+01 N/50-M. US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4315E+02	4.4756E+03	5.4139E+03
T	8.8883E+00	1.2271E+01	1.3055E+01
RHO	2.0400E+01	2.0637E+02	2.2326E+02
H	1.7387E-01	-5.6756E-01	-7.2582E-01
A	3.1842E+00	4.3953E+00	4.6925E+00
S	1.5013E+00	1.6863E+00	1.7315E+00
Z	1.3411E+00	1.7674E+00	1.8575E+00
GAME	8.5058E-01	8.9080E-01	9.0802E-01
U	1.3372E+01	1.3233E+00	1.3477E+00

SPECIES	MOLE FRACTIONS		
E-	1.6782E-10	5.8637E-08	1.4694E-07
O	8.3298E-02	3.4378E-01	4.0579E-01
O+	3.4595E-14	6.4292E-10	4.7629E-09
O++	3.4435E-64	5.3560E-45	1.5455E-43
N-	5.6219E-13	1.1530E-09	2.6370E-09
O2	1.7137E-01	9.0650E-02	5.6109E-02
O2+	1.6862E-10	5.8128E-08	1.3721E-07
O2+	4.1575E-13	1.9174E-10	2.4983E-10
C	1.7748E-12	2.3257E-08	1.6931E-07
C+	1.2183E-20	1.0011E-14	3.3784E-12
C++	1.4336E-51	1.7554E-35	3.9701E-34
C-	2.6425E-24	3.0375E-17	5.9268E-16
CO	4.2538E-01	5.2458E-01	5.1754E-01
CO+	1.4309E-13	1.2108E-09	7.8499E-09
CO2	1.1995E-01	4.0997E-02	2.0561E-02
C2	1.0698E-23	1.5919E-14	4.5063E-13

P1 = 1.00E+01 N/50-M. US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6979E+02	5.1326E+03	6.2500E+03
T	9.1459E+00	1.3087E+01	1.4510E+01
RHO	2.1118E+01	2.1019E+02	2.2034E+02
H	8.4471E-02	-7.3967E-01	-9.2465E-01
A	3.3012E+00	4.7141E+00	5.2240E+00
S	1.5409E+00	1.7390E+00	1.7875E+00
Z	1.3967E+00	1.8667E+00	1.9549E+00
GAME	8.5314E-01	9.0970E-01	9.6211E-01
U	1.4100E+01	1.4188E+00	1.4950E+00

SPECIES	MOLE FRACTIONS		
E-	3.5911E-10	1.5250E-07	6.1333E-07
O	1.1019E-01	4.1204E-01	4.7088E-01
O+	1.4665E-13	5.0712E-09	8.0775E-08
O++	1.0429E-63	7.0873E-44	1.0110E-38
N-	1.3863E-12	2.6073E-09	7.3277E-09
O2	1.7416E-01	5.2489E-02	1.7797E-02
O2+	3.6069E-10	1.4197E-07	4.1199E-07
O2+	8.0088E-13	2.2971E-10	2.2076E-10
C	6.1196E-12	1.7792E-07	3.5172E-06
C+	2.6785E-19	3.1916E-12	4.7317E-10
C++	4.6688E-51	8.2880E-35	1.1323E-29
C-	3.2972E-23	5.7642E-16	3.0336E-14
CO	4.5787E-01	5.1654E-01	5.0602E-01
CO+	4.5908E-13	8.2890E-09	1.2764E-07
CO2	2.5779E-01	1.8932E-02	5.2933E-03
C2	7.9613E-20	4.3758E-13	3.4420E-11

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/50-M. US1 = 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9776E+02	5.8030E+03	7.2066E+33
T	9.4073E+00	1.4421E+01	1.8089E+01
RHD	2.1746E+01	2.0591E+02	1.9930E+02
H	-9.5000E-03	-9.1977E-01	-1.1552E+00
A	3.4237E+00	5.2033E+00	6.0683E+00
S	1.5814E+00	1.7902E+00	1.8425E+00
Z	1.4557E+00	1.9543E+00	1.9990E+00
GAME	8.5600E-01	9.6066E-01	1.0184E+00
U	1.4826E+01	1.5673E+00	1.8132E+00

SPECIES	MOLE FRACTIONS		
F-	6.9464E-10	5.7035E-07	1.8994E-05
O-	1.4232E-01	4.7053E-01	4.9856E-01
O+	3.7515E-13	7.2843E-08	5.3895E-06
O++	1.8291E-60	3.4535E-39	2.9941E-30
D-	2.9879E-12	6.5889E-09	7.3038E-08
O2	1.7103E-01	1.8008E-02	1.3749E-03
O2+	6.9758E-10	3.8954E-07	8.4832E-07
O2-	1.4341E-12	1.9956E-10	2.1054E-10
C-	1.5084E-11	3.1005E-06	1.1957E-03
C+	5.2552E-19	3.8182E-10	2.8583E-06
C++	1.9010E-48	4.7388E-30	1.1050E-21
C-	9.6982E-23	2.3713E-14	1.0658E-10
CO	4.8371E-01	5.0609E-01	4.9847E-01
CO+	1.1610E-12	1.1437E-07	9.9712E-06
CO2	2.2297E-01	5.3729E-03	3.5933E-04
C2	2.2673E-19	2.7324E-11	1.6461E-07

P1 = 1.00E+01 N/50-M. US1 = 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5769E+02	7.0945E+03	9.0780E+03
T	9.9595E+00	1.9893E+01	2.1647E+01
RHD	2.2679E+01	1.7646E+02	2.0008E+02
H	-2.1115E-01	-1.3014E+00	-1.6032E+00
A	3.6889E+00	6.0956E+00	6.3317E+00
S	1.6650E+00	1.8771E+00	1.9263E+00
Z	1.5837E+00	2.0211E+00	2.0960E+00
GAME	8.6279E-01	9.2420E-01	8.8360E-01
U	1.6271E+01	2.0941E+00	2.0799E+00

SPECIES	MOLE FRACTIONS		
E-	2.5094E-09	1.0553E-04	4.1967E-04
O-	2.2117E-01	5.0482E-01	5.2240E-01
O+	3.6875E-12	1.7668E-05	3.7831E-05
O++	3.8074E-57	2.1617E-27	2.8081E-25
O-	1.2512E-11	2.3865E-07	8.0269E-07
O2	1.4764E-01	4.9191E-04	2.8987E-04
O2+	2.5141E-09	7.1149E-07	6.6629E-07
O2-	3.6948E-12	2.7010E-10	5.5657E-10
C-	1.1836E-10	1.0889E-02	4.5401E-02
C+	2.1059E-17	5.3103E-05	3.1362E-04
C++	1.2164E-45	5.5868E-19	3.7249E-17
C-	2.5614E-21	3.2559E-09	4.5429E-08
CO	5.1590E-01	4.8346E-01	4.3097E-01
CO+	7.8692E-12	3.4289E-05	6.8399E-05
CO2	1.1528E-01	1.2117E-04	6.0858E-05
C2	4.7874E-18	3.9425E-06	3.2203E-05

P1 = 1.00E+01 N/50-M. US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2706E+02	6.4344E+03	8.1524E+03
T	9.6782E+00	1.7209E+01	2.0553E+01
RHD	2.2260E+01	1.8739E+02	1.9463E+02
H	-1.0804E-01	-1.1063E+00	-1.3818E+00
A	3.5529E+00	5.9688E+00	6.1546E+00
S	1.6228E+00	1.8368E+00	1.8865E+00
Z	1.5180E+00	1.9953E+00	2.0380E+00
GAME	8.5920E-01	1.0376E+00	9.0432E-01
U	1.5550E+01	1.8487E+00	2.0054E+00

SPECIES	MOLE FRACTIONS		
E-	1.3638E-09	8.6549E-06	1.7512E-04
O-	1.7925E-01	4.9684E-01	5.0893E-01
O+	1.3886E-12	2.6376E-06	2.3690E-05
O++	6.4944E-60	7.5021E-32	1.4885E-26
D-	6.3737E-12	3.9455E-08	3.8502E-07
O2	1.6230E-01	2.1855E-03	4.1104E-04
O2+	1.3679E-09	7.9384E-07	7.1274E-07
O2-	2.3741E-12	1.7131E-10	3.7426E-10
C-	4.7382E-11	3.8404E-04	1.8857E-02
C+	6.9281E-18	5.8729E-07	1.0527E-04
C++	7.3238E-48	3.6817E-23	2.9042E-18
C-	7.4213E-22	1.8286E-11	9.1309E-09
CO	5.0328E-01	5.0000E-01	4.7134E-01
CO+	3.2527E-12	4.6758E-06	4.5638E-05
CO2	1.5517E-01	5.8090E-04	9.7462E-05
C2	1.3524E-18	3.0347E-08	9.1390E-06

P1 = 1.00E+01 N/50-M. US1 = 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8962E+02	7.8309E+03	1.0001E+04
T	1.0760E+01	2.1158E+01	2.2414E+01
RHD	2.2982E+01	1.7869E+02	2.0649E+02
H	-3.1882E-01	-1.5074E+00	-1.8301E+00
A	3.8339E+00	6.2381E+00	6.5222E+00
S	1.7079E+00	1.9154E+00	1.9656E+00
Z	1.6523E+00	2.0712E+00	2.1610E+00
GAME	8.6705E-01	8.8795E-01	8.7828E-01
U	1.6989E+01	2.1886E+00	2.1274E+00

SPECIES	MOLE FRACTIONS		
E-	4.6544E-09	3.1041E-04	7.1722E-04
O-	2.6682E-01	5.1678E-01	5.3650E-01
O+	1.2446E-11	3.1553E-05	5.1662E-05
O++	2.5777E-56	8.3369E-26	1.9020E-24
O-	2.3845E-11	5.7113E-07	1.2975E-06
O2	1.2825E-01	3.0490E-04	2.4263E-04
O2+	4.6485E-09	6.3388E-07	6.6920E-07
O2-	5.2976E-12	4.1868E-10	7.7288E-10
C-	3.5768E-13	3.4220E-02	7.3416E-02
C+	1.7992E-16	2.2012E-04	5.8171E-04
C++	9.1332E-45	1.4294E-17	1.7788E-16
C-	1.4318E-27	2.4446E-08	1.1689E-07
CO	5.2279E-01	4.4798E-01	3.8830E-01
CO+	2.2549E-11	5.8698E-05	8.4593E-05
CO2	8.2145E-02	6.7404E-05	4.4523E-05
C2	2.7207E-17	2.0533E-05	6.2815E-05

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/SQ-M. US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2283E+02	8.5905E+03	1.0919E+04
T	1.0587E+01	2.1977E+01	2.3053E+01
RHO	2.3170E+01	1.8339E+02	2.1236E+02
H	-4.3106E-01	-1.7225E+00	-2.0649E+00
A	3.9900E+00	6.4175E+00	6.7153E+00
S	1.7514E+00	1.9536E+00	2.0055E+00
Z	1.7237E+00	2.1314E+00	2.2305E+00
GAME	8.7737E-01	8.7921E-01	8.7702E-01
U	1.7703E+01	2.2404E+00	2.1679E+00

SPECIES	MOLE FRACTIONS		
E-	8.4600E-09	5.7412E-04	1.0683E-03
O	3.1554E-01	5.3022E-01	5.5060E-01
O+	3.8931E-11	4.4292E-05	6.7003E-05
O++	3.8134E-54	6.9146E-25	8.8258E-24
N-	4.3321E-11	9.7573E-07	1.8779E-06
O2	1.0457E-01	2.4446E-04	2.1570E-04
O2+	8.4085E-09	6.2030E-07	6.9393E-07
O2-	7.0455E-12	5.8143E-10	9.9807E-10
C	1.0434E-09	6.0879E-02	1.0151E-01
C+	1.0606E-15	4.5463E-04	9.0514E-04
C++	6.4135E-43	8.4075E-17	5.8900E-16
C-	6.5325E-20	7.3293E-08	2.2979E-07
CO	5.2417E-01	4.0741E-01	3.4540E-01
CO+	6.2943E-11	7.5625E-05	9.7550E-05
CO2	5.5712E-02	4.7697E-05	3.4205E-05
C2	9.9440E-17	4.6186E-05	9.6566E-05

P1 = 1.00E+01 N/SQ-M. US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9291E+02	1.0025E+04	1.2613E+04
T	1.1432E+01	2.3193E+01	2.4168E+01
RHO	2.3047E+01	1.9071E+02	2.1926E+02
H	-6.6916E-01	-2.1768E+00	-2.5592E+00
A	4.3693E+00	6.7873E+00	7.1104E+00
S	1.8389E+00	2.0323E+00	2.0881E+00
Z	1.8708E+00	2.2663E+00	2.3800E+00
GAME	8.9265E-01	8.7642E-01	8.7893E-01
U	1.9115E+01	2.3138E+00	2.2485E+00

SPECIES	MOLE FRACTIONS		
F-	3.0493E-08	1.2548E-03	1.9675E-03
O	4.1565E-01	5.5754E-01	5.7793E-01
O+	5.7375E-10	7.3292E-05	1.0662E-04
O++	1.9444E-48	1.3119E-23	1.1609E-22
N-	1.3375E-10	1.9892E-06	3.3130E-06
O2	5.0043E-02	1.9226E-04	1.8104E-04
O2+	2.9399E-08	6.5695E-07	7.7477E-07
O2-	9.0574E-12	9.3663E-10	1.4772E-09
C	1.2963E-08	1.1530E-01	1.5601E-01
C+	3.9962E-14	1.0837E-03	1.7471E-03
C++	7.9497E-38	8.5327E-16	4.0195E-15
C-	1.8085E-18	2.7349E-07	6.0146E-07
CO	5.1526E-01	3.2432E-01	2.6176E-01
CO+	7.1262E-10	9.9487E-05	1.1691E-04
CO2	1.9046E-02	2.8248E-05	2.0624E-05
C2	2.8803E-15	1.0720E-04	1.6049E-04

P1 = 1.00E+01 N/SQ-M. US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5730E+02	9.3378E+03	1.1810E+04
T	1.0961E+01	2.2628E+01	2.3631E+01
RHO	2.3214E+01	1.8783E+02	2.1692E+02
H	-5.4785E-01	-1.9458E+00	-2.3086E+00
A	4.1630E+00	6.6017E+00	6.9117E+00
S	1.7951E+00	1.9925E+00	2.0464E+00
Z	1.7971E+00	2.1970E+00	2.3039E+00
GAME	8.7979E-01	8.7668E-01	8.7747E-01
U	1.8413E+01	2.2795E+00	2.2114E+00

SPECIES	MOLE FRACTIONS		
E-	1.5493E-08	8.8805E-04	1.4819E-03
O	3.6582E-01	5.4394E-01	5.6450E-01
O+	1.2243E-10	5.7884E-05	8.5018E-05
O++	4.3637E-51	3.4370E-24	3.4285E-23
N-	7.6315E-11	1.4493E-06	2.5521E-06
O2	7.7971E-02	2.1311E-04	1.9665E-04
O2+	1.5274E-08	6.3251E-07	7.3093E-07
O2-	8.5269E-12	7.5634E-10	1.2377E-09
C	3.1241E-09	8.8199E-02	1.2921E-01
C+	4.1844E-15	7.4232E-04	1.2909E-03
C++	2.9253E-40	3.0247E-16	1.6329E-15
C-	2.7521E-19	1.5510E-07	3.9040E-07
CO	5.7127E-01	3.6575E-01	3.0296E-01
CO+	1.8172E-10	8.8818E-05	1.0828E-04
CO2	3.4946E-02	3.6273E-05	2.6595E-05
C2	4.0145E-16	7.6259E-05	1.3019E-04

P1 = 1.00E+01 N/SQ-M. US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2943E+02	1.0538E+04	1.3194E+04
T	1.2137E+01	2.3697E+01	2.4677E+01
RHO	2.2487E+01	1.9016E+02	2.1746E+02
H	-7.9492E-01	-2.4137E+00	-2.8158E+00
A	4.6628E+00	6.9725E+00	7.3114E+00
S	1.8821E+00	2.0735E+00	2.1312E+00
Z	1.9399E+00	2.3386E+00	2.4586E+00
GAME	9.2346E-01	8.7726E-01	8.8110E-01
U	1.9800E+01	2.3452E+00	2.2856E+00

SPECIES	MOLE FRACTIONS		
F-	7.4249E-08	1.6803E-03	2.5430E-03
O	4.6139E-01	5.7076E-01	5.9078E-01
O+	4.1251E-09	9.1119E-05	1.3299E-04
O++	4.6174E-46	4.1681E-23	3.6012E-22
N-	2.4863E-10	2.5743E-06	4.1337E-06
O2	2.3343E-02	1.7513E-04	1.6580E-04
O2+	6.5006E-08	6.8434E-07	8.1859E-07
O2-	7.7549E-12	1.1017E-09	1.6850E-09
C	1.1113E-07	1.4168E-01	1.8170E-01
C+	2.7038E-12	1.4836E-03	2.2909E-03
C++	1.4688E-35	2.0652E-15	9.1845E-15
C-	2.9909E-17	4.2748E-07	8.5986E-07
CO	5.0762E-01	2.8386E-01	2.2206E-01
CO+	5.3725E-09	1.0783E-04	1.2328E-04
CO2	7.6401E-03	2.1969E-05	1.5652E-05
C2	7.6580E-14	1.3560E-04	1.8432E-04

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $P_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 5.83E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6599E+02	1.0558E+04	1.3150E+04
T	1.3556E+01	2.4121E+01	2.5124E+01
RHO	2.1005E+01	1.8145E+02	2.0625E+02
H	-9.2486E-01	-2.6510E+00	-3.0715E+00
A	5.2748E+00	7.1500E+00	7.5065E+00
S	1.9232E+00	2.1170E+00	2.1766E+00
Z	1.9877E+00	2.4122E+00	2.5377E+00
GAME	1.0131E+00	8.7862E-01	8.8378E-01
U	2.3440E+01	2.3698E+00	2.3187E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.9360E-07	2.1673E-03	3.2204E-03
O	4.9234E-01	5.8334E-01	6.0278E-01
N+	9.4059E-08	1.1127E-04	1.6440E-04
N++	6.3166E-41	1.1571E-22	9.8437E-22
O-	6.9902E-10	3.1137E-06	4.8773E-06
O2	4.7950E-03	1.5708E-04	1.4809E-04
O2+	1.6926E-07	6.9863E-07	8.4471E-07
O2-	4.9519E-12	1.1905E-09	1.7708E-09
C	4.7024E-06	1.6679E-01	2.0571E-01
C+	9.2520E-10	1.9460E-03	2.9350E+03
C++	2.2879E-31	4.4519E-15	1.9267E-14
C-	3.2673E-15	5.9844E-07	1.1311E-06
CO	5.0148E-01	2.4520E-01	1.8473E-01
CO+	1.3006E-07	1.1305E-04	1.2621E-04
CO2	1.3855E-03	1.6621E-05	1.1384E-05
C2	1.4036E-11	1.5668E-04	1.9685E-04

 $P_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4071E+02	1.0167E+04	1.2552E+04
T	1.7861E+01	2.4914E+01	2.6056E+01
RHO	1.7768E+01	1.5920E+02	1.7850E+02
H	-1.1975E+00	-3.1359E+00	-3.5944E+00
A	5.7481E+00	7.5105E+00	7.9209E+00
S	1.9919E+00	2.2067E+00	2.2700E+00
Z	2.0189E+00	2.5634E+00	2.6986E+00
GAME	9.1628E-01	8.8325E-01	8.9227E-01
U	2.1650E+01	2.4196E+00	2.3931E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.4796E-05	3.4181E-03	5.1188E-03
O	5.0468E-01	5.0653E-01	6.2433E-01
N+	1.0393E-05	1.6541E-04	2.6015E-04
N++	6.5430E-30	7.3166E-22	7.6794E-21
O-	2.7835E-08	4.1957E-06	6.4312E-06
O2	1.4478E-04	1.2430E-04	1.1275E-04
O2+	1.7840E-07	7.2494E-07	8.9490E-07
O2-	8.2414E-12	1.2603E-09	1.7773E-09
C	9.4393E-03	2.1319E-01	2.4896E-01
C+	4.5980E-05	3.1397E-03	4.7407E-03
C++	2.6603E-20	1.7755E-14	8.5682E-14
C-	3.1679E-10	1.0000E-06	1.7591E-06
CO	4.8555E-01	1.7312E-01	1.1618E-01
CO+	1.8273E-05	1.1748E-04	1.2529E-04
CO2	3.6498E-05	8.9126E-06	5.2538E-06
C2	1.0879E-06	1.7763E-04	1.9303E-04

 $P_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3702E+02	1.0067E+04	1.2471E+04
T	1.6040E+01	2.4466E+01	2.5512E+01
RHO	1.8766E+01	1.6552E+02	1.8686E+02
H	-1.0587E+00	-2.8850E+00	-3.3220E+00
A	5.7660E+00	7.3172E+00	7.6941E+00
S	1.9596E+00	2.1627E+00	2.2240E+00
Z	2.0007E+00	2.4859E+00	2.6160E+00
GAME	1.3363E+00	8.8034E-01	8.8702E-01
U	2.1019E+01	2.3865E+00	2.3467E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.4856E-06	2.7186E-03	4.0230E-03
O	4.9971E-01	5.9508E-01	6.1374E-01
O+	7.6129E-06	1.3363E-04	2.0201E-04
O++	1.6988E-33	2.4602E-22	2.4152E-21
O-	5.5332E-09	3.5436E-06	5.4623E-06
O2	4.9677E-04	1.3804E-04	1.2836E-04
O2+	2.3229E-07	6.9607E-07	8.4903E-07
O2-	4.9914E-12	1.1835E-09	1.7133E-09
C	6.1953E-04	1.9025E-01	2.2769E-01
C+	1.3690E-06	2.4736E-03	3.7014E-03
C++	1.7067E-23	8.2917E-15	3.7747E-14
C-	3.9384E-12	4.6452E-07	1.3826E-06
CO	4.9902E-01	2.0891E-01	1.5018E-01
CO+	4.2769E-06	1.1497E-04	1.2553E-04
CO2	1.3329E-04	1.2197E-05	7.8728E-06
C2	2.3605E-08	1.6807E-04	1.9670E-04

 $P_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.8257E+02	1.0829E+04	1.3348E+04
T	1.8728E+01	2.5489E+01	2.6816E+01
RHO	1.7740E+01	1.6060E+02	1.7866E+02
H	-1.3415E+00	-3.4071E+00	-3.8938E+00
A	5.8239E+00	7.7367E+00	8.2044E+00
S	2.0227E+00	2.2494E+00	2.3150E+00
Z	2.0545E+00	2.6453E+00	2.7862E+00
GAME	8.8151E-01	8.8772E-01	9.0093E-01
U	2.2346E+01	2.4717E+00	2.4635E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.0046E-04	4.3408E-03	6.7479E-03
O	5.1318E-01	6.1765E-01	6.3421E-01
N+	1.6353E-05	2.1237E-04	3.5887E-04
N++	1.3483E-28	2.4909E-21	3.4593E-20
O-	6.1745E-08	5.1741E-06	7.9928E-06
O2	9.3441E-05	1.1370E-04	9.8637E-05
O2+	1.5053E-07	7.8794E-07	9.9063E-07
O2-	1.2207E-11	1.4273E-09	1.9549E-09
C	2.6292E-02	2.3553E-01	2.6907E-01
C+	1.5597E-04	4.0138E-03	6.2737E-03
C++	4.0594E-19	4.1605E-13	2.3991E-13
C-	1.9582E-09	1.3459E-06	2.3423E-06
CO	4.6001E-01	1.3782E-01	8.2915E-02
CO+	2.8053E-05	1.2038E-04	1.2469E-04
CO2	2.1760E-05	6.3645E-06	3.2254E-06
C2	4.7594E-06	1.8430E-04	1.8273E-04

TABLE I. Continued

$$p_1 = 10 \text{ N/m}^2$$

 $p_1 = 1.03\text{E}+01 \text{ N/SQ-M.}$
 $US_1 = 6.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2636F+02	1.1674E+04	1.4393E+04
T	1.9291F+01	2.6163E+01	2.7823E+01
RHO	1.7959F+01	1.6348E+02	1.7993E+02
H	-1.4904E+00	-3.6906E+00	-4.2124E+00
A	5.9356F+00	7.9908E+00	8.5573E+00
S	7.0534F+00	2.2919E+00	2.3603E+00
Z	2.0966E+00	2.7293F+00	2.8751E+00
GAME	8.7110E-01	8.9421E-01	9.1541E-01
U	2.3761F+01	2.5367E+00	2.5624E+00

SPECIES	MOLE FRACTIONS		
E-	3.5709F-04	5.5898F-03	9.3821E-03
O	5.2779F-01	6.2797E-01	6.4248E-01
O+	2.1458E-05	2.8248E-04	5.4146E-04
O++	8.3750E-28	9.9601E-21	2.4084E-19
N-	1.0122F-07	6.4446E-06	1.0214E-05
N2	7.4713F-05	1.0267E-04	8.2382E-05
N2+	1.4031F-07	8.7132E-07	1.1278E-06
N2+	1.6245E-11	1.6189E-09	2.1312E-09
C	4.5478F-02	2.5636F-01	2.8618E-01
C+	3.0078F-04	5.1978F-03	8.7320E-03
C++	1.9375F-18	1.0702E-13	8.7523E-13
C-	5.5130F-09	1.8064F-06	3.1697E-06
CO	4.3091F-01	1.0419F-01	5.2306E-02
CO+	3.4818E-05	1.2187E-04	1.2097E-04
CO2	1.5918F-05	4.2666E-06	1.6742E-06
C2	1.0347E-05	1.8299E-04	1.5904F-04

 $p_1 = 1.03\text{E}+01 \text{ N/SQ-M.}$
 $US_1 = 6.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.7174E+02	1.2609E+04	1.5574E+04
T	1.9731F+01	2.6970E+01	2.9230E+01
RHO	1.8760F+01	1.6615E+02	1.7995E+02
H	-1.6439E+00	-3.9839E+00	-4.5473E+00
A	6.0536F+00	8.2628E+00	9.0163E+00
S	2.0844E+00	2.3344E+00	2.4054E+00
Z	2.1421F+00	2.8138E+00	2.9608E+00
GAME	8.6705E-01	9.0402E-01	9.3933E-01
U	2.3783F+01	2.6169E+00	2.6841E+00

SPECIES	MOLE FRACTIONS		
E-	5.3799E-04	7.3933E-03	1.4211E-02
O	5.3277F-01	6.3705E-01	6.4729E-01
O+	2.6524E-05	3.9535E-04	9.3716E-04
O++	3.2395E-27	5.0547E-20	2.9800E-18
N-	1.4598E-07	8.0874E-06	1.3441E-05
N2	6.4920E-05	8.9940E-05	6.3041E-05
N2+	1.3726E-07	9.7665E-07	1.3243E-06
N2+	2.0472E-11	1.8052E-09	2.2273E-09
C	6.5397F-02	2.7487E-01	2.9706E-01
C+	4.7137E-04	6.8865E-03	1.3178E-02
C++	5.9336E-18	3.1696E-13	4.6472E-12
C-	1.1313F-08	2.4136E-06	4.3441E-06
CO	4.0067E-01	7.3011E-02	2.7009E-02
CO+	4.0113E-05	1.2097E-04	1.1204E-04
CO2	1.2578E-05	2.5771E-06	6.5504E-07
C2	1.7126E-05	1.7082E-04	1.2007E-04

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.}$
 $US_1 = 7.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1857E+02	1.3599E+04	1.6874E+04
T	2.0109E+01	2.7993E+01	3.1257E+01
RHO	1.8586E+01	1.6771E+02	1.7760E+02
H	-1.8020E+00	-4.2863E+00	-4.9051E+00
A	6.1735F+00	8.6357E+00	9.5741E+00
S	2.1156F+00	2.3766E+00	2.4507E+00
Z	2.1907F+00	2.8967E+00	3.0397E+00
GAME	8.6533E-01	9.1967E-01	9.6474E-01
U	2.4508F+01	2.7192E+00	2.8640E+00

SPECIES	MOLE FRACTIONS		
E-	7.4247E-04	1.0255E-02	2.4031E-02
O	5.4281F-01	6.4414E-01	6.4520E-01
O+	3.1920F-05	5.9912F-04	1.9448E-03
O++	1.0429E-26	3.5377E-19	8.0979E-17
N-	1.9654E-07	1.0279E-05	1.8154E-05
N2	5.8619E-05	7.4746E-05	4.2654E-05
N2+	1.3776E-07	1.1131E-06	1.6148E-06
N2+	2.4974F-11	1.9519E-09	2.1647E-09
C	8.5477E-02	2.8968E-01	2.9597E-01
C+	6.6607E-04	9.5513E-03	2.2012E-02
C++	1.4883F-17	1.1585E-12	4.0647E-11
C-	1.9663E-08	3.2251F-06	5.9451E-06
CO	3.7014E-01	4.5420F-02	1.0606E-02
CO+	4.4558E-05	1.1654E-04	9.6939E-05
CO2	1.3261E-05	1.3152E-06	1.7397E-07
C2	2.4555E-05	1.4575E-04	7.3761E-05

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.}$
 $US_1 = 7.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6683E+02	1.4624E+04	1.8269E+04
T	2.0451E+01	2.9379E+01	3.3624E+01
RHO	1.8919E+01	1.6735E+02	1.7450E+02
H	-1.9647E+00	-4.5969E+00	-5.2793E+00
A	6.2948F+00	9.0797E+00	1.0059E+01
S	2.1473F+00	2.4182E+00	2.4945E+00
Z	2.2404F+00	2.9744E+00	3.1130F+00
GAME	8.6487F-01	9.4344E-01	9.6674E-01
U	2.5233F+01	2.8557E+00	3.0674E+00

SPECIES	MOLE FRACTIONS		
E-	9.7214E-04	1.5344E-02	4.0420E-02
O	5.5281E-01	6.4761E-01	6.3432E-01
O+	3.7867E-05	1.0263E-03	4.1458E-03
O++	2.8979F-26	4.1596E-18	2.4125E-15
N-	2.5354E-07	1.3322E-05	2.3600E-05
N2	5.4197E-05	5.7149E-05	2.7817E-05
N2+	1.4058E-07	1.2992E-06	1.9754E-06
N2+	2.9786E-11	2.0093E-09	1.9824E-09
C	1.0546E-01	2.9797E-01	2.8086E-01
C+	8.8604F-03	1.4227E-02	3.6223E-02
C++	3.2701E-17	5.9171E-12	3.6918E-10
C-	3.0909E-08	4.3215E-06	7.5593E-06
CO	3.3969E-01	2.3529E-02	3.8432E-03
CO+	4.8379E-05	1.0729F-04	8.0798E-05
CO2	8.5281E-06	5.1683E-07	4.1580E-08
C2	3.2271F-05	1.0861E-04	4.0547E-05

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $p_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 7.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1647E+02	1.5668E+04	1.9715E+04
T	2.0771E+01	3.1221E+01	3.5806E+01
RHD	1.9248E+01	1.6488E+02	1.7279E+02
H	-2.1320E+00	-4.9154E+00	-5.6619E+00
A	6.4177E+00	9.5752E+00	1.0456E+01
S	2.1794E+00	2.4586E+00	2.5355E+00
Z	2.2924E+00	3.0436E+00	3.1866E+00
GAME	8.6500E-01	9.6484E-01	9.5810E-01
U	2.5959E+01	3.0336E+00	3.2564E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2296E-03	2.4681E-02	6.0436E-02
O	5.6268E-01	6.4493E-01	6.1820E-01
O+	4.4544E-05	1.9928E-03	7.6579E-03
O++	7.0932E-26	8.2673E-17	3.7484E-14
N-	3.1794E-07	1.7394E-05	2.8363E-05
N2	5.0815E-05	3.9883E-05	1.9468E-05
N2+	1.4503E-07	1.5515E-06	2.3355E-06
N2-	3.4926E-11	1.9383E-09	1.7965E-09
C	1.2520E-01	2.9556E-01	2.5918E-01
C+	1.1335E-03	2.2616E-02	5.2744E-02
C++	6.5284E-17	4.2177E-11	2.1549E-09
C-	4.5426E-08	5.6897E-06	8.6890E-06
CO	3.0956E-01	9.9982E-03	1.6345E-03
CO+	5.1709E-05	9.3592E-05	6.8244E-05
CO2	7.1508E-06	1.5341E-07	1.2615E-08
C2	3.9953E-05	6.8951E-05	2.3401E-05

 $p_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 7.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6747E+02	1.6733E+04	2.1206E+04
T	2.1081E+01	3.3279E+01	3.7768E+01
RHD	1.9561E+01	1.6180E+02	1.7197E+02
H	-2.3038E+00	-5.2419E+00	-6.0509E+00
A	6.5430E+00	9.9979E+00	1.0828E+01
S	2.2119E+00	2.4973E+00	2.5758E+00
Z	2.3461E+00	3.1078E+00	3.2651E+00
GAME	8.6561E-01	9.6651E-01	9.5070E-01
U	2.6684E+01	3.2297E+00	3.4243E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5202E-03	3.9048E-02	8.2219E-02
O	5.7237E-01	6.3543E-01	5.9909E-01
O+	5.2261E-05	3.8837E-03	1.2525E-02
O++	1.8055E-25	1.6389E-15	3.3966E-13
N-	3.9011E-07	2.1880E-05	3.2159E-05
N2	4.7907E-05	2.7287E-05	1.4473E-05
N2+	1.5066E-07	1.8483E-06	2.6762E-06
N2-	4.0407E-11	1.7850E-09	1.6249E-09
C	1.4459E-01	2.8227E-01	2.3556E-01
C+	1.4136E-03	3.5112E-02	6.9674E-02
C++	1.2813E-16	2.9452E-10	8.7377E-09
C-	6.3618E-08	7.0190E-06	9.3081E-06
CO	2.7989E-01	4.0795E-03	8.0050E-04
CO+	5.4650E-05	7.9560E-05	5.8454E-05
CO2	5.9738E-06	4.3260E-08	4.7010E-09
C2	4.7263E-05	4.0598E-05	1.4275E-05

 $p_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 7.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3198E+03	1.7839E+04	2.2739E+04
T	2.1385E+01	3.5230E+01	3.9505E+01
RHD	1.9860E+01	1.5957E+02	1.7204E+02
H	-2.4803E+00	-5.5773E+00	-6.4471E+00
A	6.6710E+00	1.0353E+01	1.1180E+01
S	2.2449E+00	2.5346E+00	2.6143E+00
Z	2.4014E+00	3.1732E+00	3.3458E+00
GAME	8.6662E-01	9.5889E-01	9.4574E-01
U	2.7408E+01	3.4152E+00	3.5763E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.8486E-03	5.6686E-02	1.0399E-01
O	5.8185E-01	6.2145E-01	5.7866E-01
O+	6.1221E-05	6.8339E-03	1.8555E-02
O++	4.1731E-25	2.0410E-14	2.0004E-12
N-	4.6965E-07	2.5924E-05	3.4993E-05
N2	4.5401E-05	1.9602E-05	1.1312E-05
N2+	1.5747E-07	2.1487E-06	2.9857E-06
N2-	4.6207E-11	1.6246E-09	1.4762E-09
C	1.6356E-01	2.6320E-01	2.1281E-01
C+	1.7306E-03	4.9816E-02	8.5426E-02
C++	2.7737E-16	1.4961E-09	2.6533E-08
C-	8.5992E-08	8.0033E-06	9.5227E-06
CO	2.5078E-01	1.8590E-03	4.4145E-04
CO+	5.7189E-05	6.8110E-05	5.0766E-05
CO2	4.9855E-06	1.4398E-08	2.0775E-09
C2	5.3999E-05	2.4566E-05	9.2081E-06

 $p_1 = 1.00E+01 \text{ N/SQ-M.} \quad US1 = 8.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0735E+03	1.8981E+04	2.4306E+04
T	2.1689E+01	3.6991E+01	4.1091E+01
RHD	2.0135E+01	1.5827E+02	1.7252E+02
H	-2.6613E+00	-5.9216E+00	-6.8512E+00
A	5.8026E+00	1.0684E+01	1.1523E+01
S	2.2783E+00	2.5709E+00	2.6519E+00
Z	2.4581E+00	3.2419E+00	3.4288E+00
GAME	8.6796E-01	9.5179E-01	9.4238E-01
U	2.8132E+01	3.5835E+00	3.7170E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2244E-03	7.5816E-02	1.2550E-01
O	5.9109E-01	6.0501E-01	5.5719E-01
O+	7.1878E-05	1.0824E-02	2.5746E-02
O++	9.7649E-25	1.5929E-13	8.8810E-12
N-	5.6143E-07	2.9233E-05	3.7027E-05
N2	4.3033E-05	1.4862E-05	9.1044E-06
N2+	1.6529E-07	2.4344E-06	3.2636E-06
N2-	5.2305E-11	1.4795E-09	1.3404E-09
C	1.8204E-01	2.4230E-01	1.9144E-01
C+	2.0937E-03	6.4968E-02	9.9736E-02
C++	4.3643E-16	5.5439E-09	6.6724E-08
C-	1.1312E-07	8.5944E-06	9.4490E-06
CO	2.2231E-01	9.5842E-04	2.6248E-04
CO+	5.9361E-05	5.9094E-05	4.4377E-05
CO2	4.1166E-06	5.7430E-09	1.0215E-09
C2	5.9878E-05	1.5622E-05	6.1478E-06

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00E+01 N/50-M. US1 = 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1286E+03	2.0154E+04	2.5901E+04
T	2.2001E+01	3.8588E+01	4.2564E+01
RHO	2.0386E+01	1.5760E+02	1.7318E+02
H	-2.8469E+00	-6.2748E+00	-7.2635E+00
A	6.9387E+00	1.1003E+01	1.1857E+01
S	2.3121E+00	2.6064E+00	2.6890E+00
Z	2.5162E+00	3.3139E+00	3.5137E+00
GAME	8.6968E-01	9.4666E-01	9.4004E-01
U	2.8854E+01	3.7372E+00	3.8494E+00

SPECIES	MOLE FRACTIONS		
E-	2.6600E-03	9.5479E-02	1.4654E-01
H	6.0004E-01	5.8703E-01	5.3489E-01
N	8.4802E-05	1.5831E-02	3.4048E-02
O++	2.3618E-24	8.7776E-13	3.2033E-11
O-	6.6572E-07	3.1816E-05	3.8374E-05
O2	4.0717E-05	1.1723E-05	7.4713E-06
O2+	1.7416E-07	2.7003E-06	3.5060E-06
O2-	5.8653E-11	1.3491E-09	1.2139E-09
C	1.9997E-01	2.2137E-01	1.7176E-01
C+	2.5147E-03	7.9634E-02	1.1249E-01
C+	8.0644E-16	1.6242E-08	1.4642E-07
C-	1.4575E-07	8.8550E-06	9.1758E-06
CO	1.9456E-01	5.4250E-04	1.6472E-04
CO+	6.1144E-05	5.1773E-05	3.8917E-05
CO2	3.3515E-06	2.6222E-09	5.4176E-10
C2	6.4673E-05	1.0343E-05	4.2087E-06

P1 = 1.00E+01 N/50-M. US1 = 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2425E+03	2.2559E+04	2.9131E+04
T	2.2667E+01	4.1425E+01	4.5259E+01
RHO	2.0795E+01	1.5715E+02	1.7455E+02
H	-3.2317E+00	-7.0069E+00	-8.1115E+00
A	7.2289E+00	1.1619E+01	1.2507E+01
S	2.3808E+00	2.6759E+00	2.7618E+00
Z	2.6361E+00	3.4653E+00	3.6875E+00
GAME	8.7458E-01	9.4047E-01	9.3721E-01
U	3.0292E+01	4.0140E+00	4.0878E+00

SPECIES	MOLE FRACTIONS		
E-	3.7857E-03	1.3467E-01	1.8668E-01
H	6.1694E-01	5.4802E-01	4.8860E-01
N	1.7100E-04	2.8818E-02	5.3604E-02
O++	1.4161E-23	1.3252E-11	2.7007E-10
O-	9.2085E-07	3.5100E-05	3.9358E-05
O2	3.5926E-05	7.8414E-06	5.1934E-06
O2+	1.9546E-07	3.1602E-06	3.8665E-06
O2-	7.1776E-11	1.1182E-09	9.8274E-10
C	2.3388E-01	1.8233E-01	1.3786E-01
C+	3.6023E-03	1.0585E-01	1.3309E-01
C+	2.7954E-15	8.7313E-08	5.2966E-07
C-	2.3139E-07	8.6793E-06	8.2878E-06
CO	1.4149E-01	2.0888E-04	7.2407E-05
CO+	6.3401E-05	4.0325E-05	3.0013E-05
CO2	2.0854E-06	7.1019E-10	1.7651E-10
C2	7.0045E-05	4.9125E-06	2.0810E-06

P1 = 1.00E+01 N/50-M. US1 = 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1849E+03	2.1351E+04	2.7508E+04
T	2.2123E+01	4.0057E+01	4.3943E+01
RHO	2.0608E+01	1.5730E+02	1.7391E+02
H	-3.0370E+00	-6.6366E+00	-7.6818E+00
A	7.0801E+00	1.1314E+01	1.2183E+01
S	2.3463E+00	2.6413E+00	2.7254E+00
Z	2.5756E+00	3.3885E+00	3.5996E+00
GAME	8.7183E-01	9.4306E-01	9.3839E-01
U	2.9574E+01	3.8798E+00	3.9653E+00

SPECIES	MOLE FRACTIONS		
E-	3.1694E-03	1.1519E-01	1.6686E-01
H	6.0867E-01	5.6796E-01	5.1203E-01
N	1.3065E-04	2.1837E-02	4.3327E-02
O++	5.3846E-24	3.7558E-12	9.8554E-11
O-	7.9418E-07	3.3749E-05	3.9126E-05
O2	3.8384E-05	9.5008E-06	6.2106E-06
O2+	1.8416E-07	2.9435E-06	3.7079E-06
O2-	6.5187E-11	1.2297E-09	1.0957E-09
C	2.1728E-01	7.0124E-01	1.5399E-01
C+	3.7071E-03	9.3342E-02	1.2354E-01
C+	1.4594E-15	4.0132E-08	2.8913E-07
C-	1.8471E-07	8.8615E-06	8.7747E-06
CO	1.6763E-01	3.2838E-04	1.0773E-04
CO+	6.7508E-05	4.5623E-05	3.4195E-05
CO2	2.6805E-06	1.3176E-09	3.0375E-10
C2	6.8149E-05	7.0509E-06	2.9412E-06

P1 = 1.03E+01 N/50-M. US1 = 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3014E+03	2.3767E+04	3.0747E+04
T	2.3038E+01	4.2712E+01	4.6516E+01
RHO	2.0941E+01	1.5701E+02	1.7502E+02
H	-3.4310E+00	-7.3855E+00	-8.5496E+00
A	7.3873E+00	1.1919E+01	1.2826E+01
S	2.4157E+00	2.7102E+00	2.7980E+00
Z	2.6975E+00	3.5439E+00	3.7767E+00
GAME	8.7814E-01	9.3858E-01	9.3643E-01
U	3.1007E+01	4.1414E+00	4.2062E+00

SPECIES	MOLE FRACTIONS		
E-	4.5437E-03	1.5378E-01	2.0585E-01
H	6.2479E-01	5.2739E-01	4.6474E-01
N	1.4764E-04	3.6732E-02	6.4698E-02
O++	3.7768E-23	4.0416E-11	6.6900E-10
O-	1.0802E-06	3.5932E-05	3.9126E-05
O2	3.3292E-05	6.5498E-06	4.3596E-06
O2+	2.3030E-07	3.3467E-06	3.9774E-06
O2-	7.8286E-11	1.0128E-09	8.7559E-10
C	2.4965E-01	1.6481E-01	1.2341E-01
C+	4.3335E-03	1.1705E-01	1.4117E-01
C+	5.4566E-15	1.7237E-07	9.1014E-07
C-	2.8737E-07	8.3632E-06	7.7542E-06
CO	1.6366E-01	3.1783E-04	4.9835E-05
CO+	6.3748E-05	3.5680E-05	2.6314E-05
CO2	1.5671E-06	4.0250E-10	1.0575E-10
C2	7.0103E-05	3.4783E-06	1.4906E-06

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad U_1 = 9.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3615F+03	2.4956E+04	3.2332F+04
T	2.3453F+01	4.3932E+01	4.7722E+01
RHM	2.1037F+01	1.5675E+02	1.7521E+02
H	-3.5348F+00	-7.7720F+00	-8.9960F+00
A	7.5590F+00	1.2215E+01	1.3142E+01
S	2.4507F+00	2.7445F+00	2.8342F+00
Z	2.7545F+00	3.6239E+00	3.8669E+00
GAMF	9.8791F+01	9.3719E+01	9.3598E+01
I	3.1719F+01	4.7632F+00	4.3210E+00

SPECIES ----- MOLE FRACTIONS -----

F-	5.5115F-03	1.7243E-01	2.2436E-01
O	6.3211F-01	5.0619E-01	4.4063E-01
O+	1.8412F-04	4.5517F-02	7.6473E-02
O++	1.7724F-22	1.0944E-10	1.5252E-09
N-	1.2682E-06	3.6294E-05	3.8479E-05
N2	3.0397E-05	5.5123E-06	3.6637E-06
N2+	2.2379E-07	3.4984E-06	4.0378E-06
N2-	8.4477E-11	9.1246E-10	7.7392E-10
C	2.6441E-01	1.4876E-01	1.1052E-01
C+	5.2653E-03	1.2692E-01	1.4790E-01
C++	1.1162F-14	3.1491E-07	1.4845E-06
C-	3.5496F-07	7.9549E-06	7.1979E-06
C1	9.2367E-02	9.3591E-05	3.4936E-05
C0+	6.1433E-05	3.1562F-05	2.3034F-05
C02	1.1210E-06	2.3702E-10	6.4757E-11
C2	6.8025F-05	2.4945E-06	1.0783E-06

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad U_1 = 9.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4850F+03	2.7153E+04	3.5250E+04
T	2.4514E+01	4.6193E+01	4.9995E+01
RHM	2.1012F+01	1.5519F+02	1.7408E+02
H	-4.3559F+00	-8.5671E+00	-9.9114E+00
A	7.9736F+00	1.2793E+01	1.3766E+01
S	2.5710F+00	2.8131E+00	2.9068E+00
Z	2.8831F+00	3.7878E+00	4.0502E+00
GAMF	8.9956E+01	9.3539E+01	9.3593E+01
I	3.3127F+01	4.4919E+00	4.5408E+00

SPECIES ----- MOLE FRACTIONS -----

F-	8.6875E-03	2.0818E-01	2.5944E-01
O	6.4432F-01	4.6255E-01	3.9224E-01
O+	3.2208F-04	6.5339E-02	1.0149E-01
O++	1.5059F-21	6.0757E-10	6.4768E-09
N-	1.7849F-06	3.5742E-05	3.6078E-05
N2	2.3475E-05	3.9398E-06	2.5716E-06
N2+	2.6198E-07	1.6793E-06	4.0514E-06
N2-	9.4124F-11	7.2346E-10	5.8614E-10
C	2.8927F-01	1.2096F-01	8.8782E-02
C+	8.3075F-03	1.4285E-01	1.5797E-01
C++	6.5400E-14	8.7879F-07	3.4895E-06
C-	5.4282E-07	6.9759E-06	6.0700E-06
C0	4.8949F-02	4.5908E-05	1.7852E-05
C0+	6.0023E-05	2.4582E-05	1.7501E-05
C02	4.4856E-07	8.8762E-11	2.5303E-11
C2	5.6196E-05	1.3188E-06	5.7586E-07

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad U_1 = 9.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4727F+03	2.6098E+04	3.3851E+04
T	2.3933F+01	4.5091E+01	4.8881E+01
RHM	2.1068F+01	1.5621E+02	1.7496E+02
H	-3.8431F+00	-8.1661E+00	-9.4503E+00
A	7.7508F+00	1.2506E+01	1.3456E+01
S	2.4859E+00	2.7787E+00	2.8704E+00
Z	2.8716F+00	3.7053E+00	3.9581E+00
GAMF	8.8962E+01	9.3614E+01	9.3582E+01
I	3.2477F+01	4.3800E+00	4.4325E+00

SPECIES ----- MOLE FRACTIONS -----

F-	6.8147E-03	1.9057E-01	2.4222E-01
O	6.3873E-01	4.8453E-01	4.1641E-01
O+	2.3747E-04	5.5388E-02	8.8785E-02
O++	3.5584E-22	2.6902E-10	3.2413E-09
N-	1.4968E-06	3.6223E-05	3.7454E-05
N2	2.7151E-05	4.6576E-06	3.0748E-06
N2+	2.4058E-07	3.6108E-06	4.0461E-06
N2-	8.9949E-11	8.1621E-10	6.7749E-10
C	2.7781E-01	1.3417E-01	9.9031E-02
C+	6.5161E-03	1.3549E-01	1.5345E-01
C++	7.5103E-14	5.4022E-07	2.3184E-06
C-	4.3814E-06	7.4854E-06	6.6337E-06
C0	6.9736E-02	6.4967E-05	2.4841E-05
C0+	6.2278F-05	2.7884E-05	2.0111E-05
C02	7.4706E-07	1.4350E-10	4.0275E-11
C2	6.3488E-05	1.8067E-06	7.8591E-07

 $p_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad U_1 = 9.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5482E+03	2.8058E+04	3.6445E+04
T	2.5754F+01	4.7237E+01	5.1075E+01
RHM	2.0833F+01	1.5343E+02	1.7217E+02
H	-4.2731F+00	-8.9738E+00	-1.0378E+01
A	8.2435F+00	1.3075E+01	1.4078E+01
S	2.5560F+00	2.8478F+00	2.9442E+00
Z	2.9426F+00	3.8713E+00	4.1446E+00
GAMF	9.1445F+01	9.3490E+01	9.3629E+01
I	3.3818F+01	4.5989E+00	4.6454E+00

SPECIES ----- MOLE FRACTIONS -----

F-	1.1603F-02	2.2524F-01	2.7631E-01
O	6.4827E-01	4.4038E-01	3.6783E-01
O+	4.7037F-04	7.6148E-02	1.1465E-01
O++	8.7013F-21	1.2731E-09	1.2366E-08
N-	2.1651E-06	3.4862E-05	3.4322E-05
N2	1.9321E-05	3.3273E-06	2.1308E-06
N2+	2.8933F-07	3.6994E-06	3.8999E-06
N2-	9.6063F-11	6.3368E-10	4.9795E-10
C	2.9763F-01	1.0904F-01	7.9467E-02
C+	1.1079F-02	1.4910E-01	1.6167E-01
C++	7.0907F-13	1.3654E-06	5.1153E-06
C-	6.7803F-07	6.4396E-06	5.4981E-06
C0	3.0826F-02	3.2894E-05	1.2852E-05
C0+	5.6373F-05	2.1601E-05	1.5122E-05
C02	2.3059E-07	5.5738F-11	1.5836E-11
C2	4.4088F-05	9.6835E-07	4.2073E-07

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

P1 = 1.00F+01 N/50-M. US1 = 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6120F+03	2.8743E+04	3.7344E+04
T	2.6226F+01	4.8220E+01	5.2069E+01
RHO	2.0499E+01	1.5070E+02	1.6930E+02
H	-4.4947F+00	-9.3849E+00	-1.0848E+01
A	8.5695F+00	1.3352E+01	1.4375E+01
S	2.5905F+00	2.8830E+00	2.9807E+00
Z	2.9984F+00	3.9555E+00	4.2363E+00
GAME	9.3386F+01	9.3460E-01	9.3685E-01
U	3.4494F+01	4.6992E+00	4.7456E+00

SPECIES	MOLE FRACTIONS		
E-	1.6479E-02	2.4113E-01	2.9197E-01
D	6.4942E-01	4.1815F-01	3.4458E-01
O+	7.5815E-04	8.7382E-02	1.2747E-01
O++	7.6549E-20	2.4989E-09	2.1988E-08
N-	2.6818E-06	3.3596E-05	3.2343E-05
O2	1.4877F-05	2.7983E-06	1.7644E-06
O2+	3.2554E-07	3.6679E-06	3.7532E-06
O2-	9.4596E-11	5.4687E-10	4.1866E-10
C	3.0082E-01	9.8283E-02	7.1410E-02
C+	1.5673E-02	1.5436E-01	1.6451E-01
C++	8.7717E-13	2.0383E-06	7.1986E-06
C-	8.5341E-07	5.8861E-06	4.9561E-06
CO	1.6752E-02	2.3800E-05	9.4026E-06
CO+	5.0938E-05	1.8901E-05	1.3068E-05
CO2	9.3894F-01	3.5263E-11	1.0082E-11
C2	3.4012E-05	7.1242E-07	3.1100E-07

P1 = 1.02E+01 N/50-M. US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6764E+03	2.9216E+04	3.7957E+04
T	2.7438F+01	4.9147E+01	5.3031E+01
RHO	2.0035E+01	1.4712E+02	1.6530E+02
H	-4.7206E+00	-9.8002E+00	-1.1322E+01
A	8.9065F+00	1.3623E+01	1.4673E+01
S	2.6241E+00	2.9187E+00	3.0184E+00
Z	3.0497F+00	4.0406E+00	4.3301E+00
GAME	9.4800F-01	9.3451E-01	9.3762E-01
U	3.5156E+01	4.7946E+00	4.8420E+00

SPECIES	MOLE FRACTIONS		
F-	2.4491F-02	2.5768E-01	3.0730E-01
N	6.4643F-01	3.9596E-01	3.2130E-01
O+	1.3263E-03	9.8940E-02	1.4052E-01
O++	9.3266E-19	4.6297F-09	3.7824E-08
N-	3.3345E-06	3.2023E-05	3.0093E-05
O2	1.0792E-05	2.3422E-06	1.4436E-06
O2+	3.7178E-07	3.5896E-06	3.5603E-06
O2-	8.9477E-11	4.6533E-10	3.4473E-10
C	2.9656E-01	8.8589E-02	6.4027E-02
C+	2.3174E-02	1.5875E-01	1.6678E-01
C++	4.5584E-12	2.9412E-06	9.9515E-06
C-	1.0674E-06	5.3337E-06	4.4199E-06
CO	7.9841E-03	1.7359E-05	6.8556E-06
CO+	4.4406E-05	1.6469E-05	1.1199E-05
CO2	3.3311E-08	2.2452E-11	6.3497E-12
C2	2.2571E-05	5.2552E-07	2.2837E-07

P1 = 1.00F+01 N/50-M. US1 = 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8429E+03	3.0466E+04	3.9581E+04
T	3.0548F+01	5.1399E+01	5.5443E+01
RHO	1.9003F+01	1.3923E+02	1.5626E+02
H	-5.1752E+00	-1.0873E+01	-1.2547E+01
A	9.5424F+00	1.4306E+01	1.5437E+01
S	2.7043F+00	3.0075E+00	3.1124E+00
Z	3.1746F+00	4.2572E+00	4.5686E+00
GAME	9.3894F-01	9.3533E-01	9.4082E-01
U	3.5808E+01	5.0315F+00	5.0867E+00

SPECIES	MOLE FRACTIONS		
F-	5.6584E-02	2.9544E-01	3.4345E-01
N	6.7389F-01	3.4069E-01	2.6447E-01
O+	4.6650E-03	1.2934E-01	1.7326E-01
O++	2.6043E-16	1.8656E-08	1.3394E-07
N-	5.0007F-06	2.7736E-05	2.4397E-05
O2	5.0893E-06	1.4872E-06	8.4892E-07
O2+	5.7149F-07	3.2846E-06	2.9979E-06
O2-	7.2142F-11	3.0416E-10	2.0382E-10
C	2.6153E-01	6.8357E-02	4.8594E-02
C+	5.1894F-02	1.6640F-01	1.7016E-01
C++	1.7465E-10	6.7292F-06	2.1288E-05
C-	1.4898F-04	4.1229E-06	3.2707E-06
CO	1.3876E-03	8.1082F-06	3.1184E-06
CO+	3.0855F-05	1.1574E-05	7.4831E-06
CO2	2.8132F-09	7.4931E-12	1.9776E-12
C2	7.5913F-06	2.5083F-07	1.0589E-07

P1 = 1.00E+01 N/50-M. US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0191E+03	3.2401E+04	4.2147E+04
T	3.3049F+01	5.3707E+01	5.8071E+01
RHO	1.8452E+01	1.3466F+02	1.5076E+02
H	-5.9188F+00	-1.2038E+01	-1.3857E+01
A	1.0077F+01	1.5022E+01	1.6265E+01
S	2.7802F+00	3.0948E+00	3.2054E+00
Z	3.3109F+00	4.4801E+00	4.8142E+00
GAME	9.2793E-01	9.3784E-01	9.4632E-01
U	3.8496F+01	5.2826E+00	5.3712E+00

SPECIES	MOLE FRACTIONS		
F-	9.4445E-02	3.3049E-01	3.7694E-01
N	5.9272F-01	2.8625E-01	2.0961E-01
O+	1.0927F-07	1.6012E-01	2.0579E-01
O++	1.1694E-14	6.6564E-08	4.5450E-07
N-	6.1378E-06	2.3458E-05	1.8991E-05
O2	2.9930E-06	9.2770E-07	4.7179E-07
O2+	6.1970F-07	2.8884E-06	2.3890E-06
O2-	5.8551F-11	1.9501E-10	1.1354E-10
C	2.1798F-01	5.2732E-02	3.6499E-02
C+	8.3503F-02	1.7035E-01	1.7107E-01
C++	1.9373E-09	1.4327E-05	4.4862E-05
C-	1.6281E-06	3.1770E-06	2.3777E-06
CO	3.8990E-04	3.8697E-06	1.3837E-06
CO+	2.2808F-05	8.0464E-06	4.8402E-06
CO2	4.8656E-10	2.5441E-12	5.8784E-13
C2	3.0808E-06	1.2283E-07	4.8524E-08

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $P_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad US_1 = 1.15\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2045E+03	3.4731E+04	4.5266E+04
T	3.5164E+01	5.6104E+01	6.0994E+01
RHO	1.8128E+01	1.3149E+02	1.4657E+02
H	-6.5613E+00	-1.3202E+01	-1.5241E+01
A	1.3594E+01	1.5775E+01	1.7172E+01
S	2.8549E+00	3.1814E+00	3.2977E+00
Z	3.4583E+00	4.7079E+00	5.0633E+00
GAME	9.2284E-01	9.4211E-01	9.5485E-01
U	4.0205E+01	5.5509E+00	5.6738E+00

SPECIES	MOLE FRACTIONS		
F-	1.3281E-01	3.6287E-01	4.0759E-01
O	5.5765E-01	2.3375E-01	1.5802E-01
O+	2.0497E-02	1.9103E-01	2.3696E-01
O++	1.9546E-13	2.1792E-07	1.5317E-06
N-	6.7890E-06	1.9119E-05	1.3839E-05
N2	1.9726E-06	5.5470E-07	2.3780E-07
N2+	7.7512E-07	2.4153E-06	1.7610E-06
N2-	4.7641E-11	1.1871E-10	5.6498E-11
C	1.7657E-01	4.0482E-02	2.6862E-02
C+	1.1237E-01	1.7180E-01	1.7045E-01
C++	1.1025E-08	2.9254E-05	9.6023E-05
C-	1.5664E-06	2.4078E-06	1.6572E-06
CO	1.4171E-04	1.8362E-06	5.7446E-07
CO+	1.7326E-05	5.4609E-06	2.9575E-06
CO2	1.7315E-10	8.5151E-13	1.5447E-13
C2	1.3851E-06	6.0181E-08	2.1109E-08

 $P_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad US_1 = 1.25\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6017E+03	4.7137E+04	5.2767E+04
T	3.8761E+01	6.1473E+01	6.8779E+01
RHO	1.7806E+01	1.2638E+02	1.3821E+02
H	-7.9326E+00	-1.5755E+01	-1.8274E+01
A	1.1585E+01	1.7442E+01	1.9436E+01
S	3.3008E+00	3.3514E+00	3.4810E+00
Z	3.7696E+00	5.1664E+00	5.5508E+00
GAME	9.1854E-01	9.5791E-01	9.8945E-01
U	4.3658E+01	6.1630E+00	6.4525E+00

SPECIES	MOLE FRACTIONS		
F-	2.7431E-01	4.1942E-01	4.5962E-01
O	4.8010E-01	1.3841E-01	6.8777E-02
O+	5.0411E-02	2.4869E-01	2.9150E-01
O++	1.1967E-11	2.1294E-06	2.2828E-05
N-	7.0567E-06	1.0742E-05	5.0608E-06
N2	9.8770E-07	1.5698E-07	3.3386E-08
N2+	8.7951E-07	1.3837E-06	6.3767E-07
N2-	3.0923E-11	3.3163E-11	7.0215E-12
C	1.1122E-01	2.2860E-02	1.2571E-02
C+	1.5390E-01	1.7049E-01	1.6692E-01
C++	1.7818E-07	1.2134E-04	5.7832E-04
C-	1.7077E-06	1.2451E-06	6.0502E-07
CO	2.7304E-05	3.5900E-07	5.9730E-08
CO+	1.0177E-05	2.7000E-06	7.6866E-07
CO2	1.3583E-11	7.2147E-14	4.4741E-15
C2	3.2702E-07	1.2938E-08	2.5774E-09

 $P_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad US_1 = 1.20\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3987E+03	3.7338E+04	4.8829E+04
T	3.7037E+01	5.8663E+01	6.4391E+01
RHO	1.7933E+01	1.2889E+02	1.4283E+02
H	-7.2326E+00	-1.4451E+01	-1.6710E+01
A	1.1094E+01	1.6577E+01	1.8191E+01
S	2.9781E+00	3.2672E+00	3.3885E+00
Z	3.6116E+00	4.9384E+00	5.3091E+00
GAME	9.2019E-01	9.4853E-01	9.6799E-01
U	4.1927E+01	5.8418E+00	6.0257E+00

SPECIES	MOLE FRACTIONS		
F-	1.6954E-01	3.9261E-01	4.3502E-01
O	5.2007E-01	1.8410E-01	1.1107E-01
O+	3.3619E-02	2.2087E-01	2.6562E-01
O++	1.8408E-12	6.8373E-07	5.4006E-06
N-	7.7648E-06	1.4817E-05	9.1512E-06
N2	1.3780E-06	3.0977E-07	1.0313E-07
N2+	8.1391E-07	1.8993E-06	1.1652E-06
N2-	3.9605E-11	6.6517E-11	2.3586E-11
C	1.4078E-01	3.0716E-02	1.9100E-02
C+	1.3591E-01	1.7163E-01	1.6895E-01
C++	4.7499E-05	5.9085E-05	2.1758E-04
C-	1.4041E-06	1.7708E-06	1.0768E-06
CO	5.9561E-05	8.3971E-07	2.1152E-07
CO+	1.3284E-05	3.5645E-06	1.6532E-06
CO2	3.8477E-11	2.6369E-13	3.2905E-14
C2	6.6056E-07	2.8681E-08	8.3007E-09

 $P_1 = 1.00\text{E}+01 \text{ N/SQ-M.} \quad US_1 = 1.30\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.8130E+03	4.3055E+04	5.7074E+04
T	4.0379E+01	6.4793E+01	7.4841E+01
RHO	1.7770E+01	1.2322E+02	1.3231E+02
H	-8.6611E+00	-1.7109E+01	-1.9949E+01
A	1.2069E+01	1.8431E+01	2.0961E+01
S	3.0732E+00	3.4361E+00	3.5722E+00
Z	3.9114E+00	5.3927E+00	5.7640E+00
GAME	9.1755E-01	9.7222E-01	1.0185E+00
U	4.5388E+01	6.5359E+00	6.9992E+00

SPECIES	MOLE FRACTIONS		
F-	2.3705E-01	4.4377E-01	4.7963E-01
O	4.3820E-01	9.6428E-02	3.5467E-02
O+	7.0493E-02	2.7443E-01	3.1138E-01
O++	5.9575E-11	7.1605E-06	1.2710E-04
N-	6.8337E-06	6.9830E-06	2.1453E-06
N2	7.1429E-07	6.6936E-08	7.0155E-09
N2+	9.1469E-07	8.9595E-07	2.6398E-07
N2-	2.4397E-11	1.3495E-11	1.2632E-12
C	8.7670E-02	1.6287E-02	7.4003E-03
C+	1.6656E-01	1.6880E-01	1.6406E-01
C++	3.7507E-07	2.6932E-04	1.9534E-03
C-	1.7139E-06	8.0343E-07	2.7223E-07
CO	1.3293E-05	1.3225E-07	1.1339E-08
CO+	7.7567E-06	1.2230E-06	2.7506E-07
CO2	5.1887E-12	1.5272E-14	3.1129E-16
C2	1.6733E-07	5.1230E-09	5.5705E-10

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $P_1 = 1.03F+01 \text{ N/SQ-M.} \quad U_1 = 1.35E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0328F+03	4.6058E+04	6.1746E+04
T	4.1917F+01	6.8934E+01	8.2585E+01
RHD	1.7661F+01	1.1923F+02	1.2616E+02
M	-9.4183F+00	-1.8514E+01	-2.1740E+01
A	1.2551F+01	1.9595E+01	2.2320E+01
S	3.1455F+00	3.5191E+00	3.6583E+00
Z	4.0968E+00	5.6039E+00	5.9266E+00
GAMF	9.1725F-01	9.9394E-01	1.0179E+00
U	4.7125F+01	6.9814E+00	7.6558E+00

 $P_1 = 1.03F+01 \text{ N/SQ-M.} \quad U_1 = 1.42E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2611F+03	4.9102E+04	6.6589E+04
T	4.3388E+01	7.4230E+01	8.9800E+01
RHD	1.7627F+01	1.1445E+02	1.2221E+02
M	-1.0204F+01	-1.9965E+01	-2.3571E+01
A	1.3030F+01	2.0914E+01	2.3154E+01
S	3.2170F+00	3.5970E+00	3.7387E+00
Z	4.2639F+00	5.7798E+00	6.0678E+00
GAMF	9.1772F-01	1.0195E+00	9.8384E-01
U	4.8863F+01	7.5350E+00	8.2299E+00

SPECIES ----- MOLE FRACTIONS -----

F-	2.6784E-01	4.6474E-01	4.9388E-01
O	3.9505E-01	6.0324E-02	1.6283E-02
O+	9.3114E-02	2.9654E-01	3.2039E-01
O++	2.4164E-10	2.7630E-05	7.8675E-04
N-	6.4509E-06	3.8850E-06	7.5280E-07
N2	5.1568E-07	2.2232E-08	1.1023E-09
N2+	9.1575E-07	4.9176E-07	8.9221E-08
N2-	1.8890E-11	4.0965E-12	1.6051E-13
C	6.9246E-07	1.0892E-02	4.0684E-03
C+	1.7473E-01	1.6679E-01	1.5727E-01
C++	7.2568E-07	6.7957E-04	7.3228E-03
C-	8.4115E-07	4.5803E-07	1.0328E-07
CO	6.7648E-06	3.9039E-08	1.6621E-09
CO+	5.8826E-06	5.8114E-07	8.0216E-08
CO2	2.0823E-12	2.2139E-15	1.3935E-17
C2	8.9312E-08	1.6651E-09	9.2423E-11

SPECIES ----- MOLE FRACTIONS -----

F-	2.9653E-01	4.8103E-01	5.0566E-01
O	3.5190E-01	3.3278E-02	8.7158E-03
O+	1.1714E-01	3.1263E-01	3.1775E-01
O++	8.2801E-10	1.2525F-04	3.1433E-03
N-	5.9580E-06	1.7915E-06	3.1981E-07
N2	3.7098E-07	5.4786E-09	2.4468E-10
N2+	8.8433E-07	2.2153E-07	3.6056E-08
N2-	1.4358E-11	8.7426F-13	3.0013E-14
C	5.5025E-02	6.7768E-03	2.4524E-03
C+	1.7939F-01	1.6417E-01	1.4293E-01
C++	1.4661E-06	1.9938E-03	1.9349E-02
C-	6.9444E-07	2.2360E-07	4.4923E-08
CO	3.5748E-06	8.8333E-09	3.4234E-10
CO+	4.4465F-06	2.3154E-07	2.7771E-08
CO2	8.7615E-13	2.0386E-16	1.0989E-18
C2	4.8195F-08	4.2450E-10	1.9803E-11

 $P_1 = 1.03F+01 \text{ N/SQ-M.} \quad U_1 = 1.45E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4976F+03	5.7075E+04	7.1332E+04
T	4.4854F+01	8.0780E+01	9.5407E+01
RHD	1.7571F+01	1.0893E+02	1.2033E+02
M	-1.1019F+01	-2.1461E+01	-2.5405E+01
A	1.3525F+01	2.2089E+01	2.3884E+01
S	3.2903F+00	3.6721E+00	3.8136E+00
Z	4.4778F+00	5.9178E+00	6.2137E+00
GAMF	9.1900F-01	1.0207E+00	9.6222F-01
U	5.0605E+01	8.1726E+00	8.6460E+00

SPECIES ----- MOLE FRACTIONS -----

F-	3.2409F-01	4.9313E-01	5.1726E-01
O	3.0818F-01	1.6731E-02	5.7237E-03
O+	1.4243F-01	3.2061E-01	3.0848E-01
O++	2.5748F-09	6.1895E-04	7.6687E-03
N-	5.3607F-06	7.0950E-07	1.7999E-07
N2	2.5893E-07	1.0683E-09	8.7999E-11
N2+	8.2205F-07	8.4840E-08	1.9133E-08
N2-	1.0526F-11	1.4074E-13	9.7377E-15
C	4.3633F-02	3.9831E-03	1.6686E-03
C+	1.8160F-01	1.5856E-01	1.2495E-01
C++	2.8077E-06	6.3632F-03	3.4250E-02
C-	5.6639F-07	9.5013E-08	2.4439E-08
CO	1.8976F-06	1.6200F-09	1.1219E-10
CO+	3.3089E-06	7.8186F-08	1.2644E-08
CO2	3.6633E-13	1.3123E-17	1.8873E-19
C2	2.6445F-08	8.7281E-11	6.2815E-12

 $P_1 = 1.03F+01 \text{ N/SQ-M.} \quad U_1 = 1.50E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.7422F+03	5.5207E+04	7.6122E+04
T	4.6305F+01	8.7125E+01	1.0002E+02
RHD	1.7519F+01	1.0494F+02	1.1955E+02
M	-1.1861F+01	-2.3011E+01	-2.7261E+01
A	1.4027F+01	2.2828E+01	2.4610E+01
S	3.3629F+00	3.7433E+00	3.8855E+00
Z	4.6130F+00	6.0380E+00	6.3662E+00
GAMF	9.2114F-01	9.9064E-01	9.5118E-01
U	5.2335F+01	8.7491E+00	8.9642E+00

SPECIES ----- MOLE FRACTIONS -----

F-	3.4977F-01	5.0322E-01	5.2883E-01
O	2.6577F-01	9.3068E-03	4.1930E-03
O+	1.6777F-01	3.1966E-01	2.9565E-01
O++	7.2705F-09	2.2644E-03	1.4304E-02
N-	4.7105F-06	3.1782E-07	1.1826E-07
N2	1.7725F-07	2.6114E-10	4.1146E-11
N2+	7.3749F-07	3.6414E-08	1.1763E-08
N2-	7.4755F-12	2.9136E-14	4.2723E-15
C	3.4689E-02	2.4897E-03	1.2102E-03
C+	1.8198E-01	1.4708E-01	1.0705E-01
C++	5.1110E-06	1.5977E-02	4.8753E-02
C-	4.5887E-07	4.3946E-08	1.5084E-08
CO	1.0185E-06	3.7176E-10	4.7340E-11
CO+	2.4380E-06	2.9372E-08	6.6865E-09
CO2	1.5373F-13	1.2249E-18	4.9564E-20
C2	1.4732E-08	2.1092E-11	2.4812E-12

TABLE I.- Continued

$$p_1 = 10 \text{ N/m}^2$$

 $P_1 = 1.00F+01 \text{ N/SQ-M.} \quad US1 = 1.55E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9948F+03	5.8513E+04	8.0967E+04
T	4.7783F+01	9.2383E+01	1.0410E+02
RHO	1.7451F+01	1.0274E+02	1.1919E+02
H	-1.2733F+01	-2.4620E+01	-2.9178E+01
A	1.4546F+01	2.3467E+01	2.5337E+01
S	3.4356F+00	3.8120F+00	3.9567E+00
Z	4.7909F+00	6.1649E+00	6.5256E+00
GAME	9.2426E-01	9.6696E-01	9.4499E-01
J	5.4067F+01	9.1973F+00	9.2829E+00

SPECIES ----- MOLE FRACTIONS -----

F-	3.7393E-01	5.1345E-01	5.4034E-01
O	2.2472E-01	6.0846E-03	3.2354E-03
N+	1.9274E-01	3.1272E-01	2.8018E-01
N++	1.9417E-08	5.6078E-03	2.3072E-02
n-	4.3209E-06	1.7770E-07	8.3715E-08
n?	1.1705E-07	9.3317E-11	2.1816E-11
n2+	6.3663E-07	1.9347E-08	7.7257E-09
n2-	5.0699E-12	9.3232E-15	2.1674E-15
C	2.7477E-02	1.7091E-03	9.0348E-04
C+	1.8115E-01	1.3135E-01	9.0521E-02
C++	9.7839E-06	2.9078E-02	6.1750E-02
C-	3.6664E-07	2.4117E-08	9.9007E-09
C0	5.4078E-07	1.2257E-10	2.2571E-11
C0+	1.7674E-06	1.3610E-08	3.7878E-09
C0?	6.2728E-14	2.1322E-19	1.5999E-20
C?	8.1713E-09	6.8614E-12	1.0907E-12

 $P_1 = 1.00F+01 \text{ N/SQ-M.} \quad US1 = 1.65E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2552F+03	6.1923E+04	8.5754E+04
T	4.9325F+01	9.6786F+01	1.0783F+02
RHO	1.7356E+01	1.0153E+02	1.1889E+02
H	-1.3633F+01	-2.6286E+01	-3.1136E+01
A	1.5089E+01	2.4120E+01	2.6058E+01
S	3.5083F+00	3.8793E+00	4.0275E+00
Z	4.9706F+00	6.3015E+00	6.6894E+00
GAME	9.2858E-01	9.5385E-01	9.4142E-01
H	5.5793F+01	9.5481E+00	9.5621E+00

SPECIES ----- MOLE FRACTIONS -----

F-	3.9654E-01	5.2399E-01	5.5160E-01
O	1.8536E-01	4.4169E-03	2.5692E-03
N+	2.1700E-01	3.0219E-01	2.6265E-01
N++	5.0442E-08	1.0776E-02	3.3763E-02
n-	3.3133E-06	1.1513E-07	6.1780E-08
n?	7.3570E-08	4.2801E-11	1.2411E-11
n2+	5.2601E-07	1.1824E-08	5.2447E-09
n2-	3.2365E-12	3.9780E-15	1.1924E-15
C	2.1572E-02	1.2435E-03	6.8695E-04
C+	1.7951E-01	1.1451E-01	7.6049E-02
C++	1.6057E-05	4.2873E-02	7.2688E-02
C-	2.8699E-07	1.4854E-08	6.7528E-09
C0	2.7901E-07	5.1196E-11	1.1578E-11
C0+	1.2396E-06	7.2284E-09	2.2350E-09
C0?	2.4161E-14	5.3819E-20	5.8352E-21
C?	4.4432E-09	2.7220E-12	5.1369E-13

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1= 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+C2
T	2.5812E+00	3.4570E+00	4.0725E+C0
RHO	6.1029E+00	1.5532E+01	2.7E+00E+01
M	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9263E+C0
S	1.0662E+00	1.0778E+00	1.0948E+00
Z	1.0000E+00	1.0000E+00	1.0000E+C0
GAME	9.2819E-01	9.1622E-01	9.1114E-C1
U	3.0950E+00	9.6609E-01	8.7893E-01

SPECIES	-----	MOLE FRACTIONS	-----
F-	7.5973E-50	2.2490E-40	8.1111E-32
O	1.6285E-13	1.0413E-10	6.0841E-09
O+	1.0048E-36	6.6901E-33	4.6444E-30
O++	0.	0.	0.
O-	4.6769E-57	1.4223E-46	2.9873E-37
O2	4.3992E-04	4.3997E-04	4.4502E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0357E-51	4.9657E-42	3.8353E-34
C	3.7314E-51	3.2764E-42	3.2192E-34
C+	2.0585E-61	4.6731E-53	1.2041E-45
C++	0.	0.	0.
C-	5.3639E-96	4.8584E-79	3.2574E-63
CO	1.1426E-10	1.0598E-07	1.0214E-05
CO+	1.6667E-24	3.6504E-31	7.7436E-28
CO2	5.9946E-01	5.9956E-01	5.9954E-C1
C2	2.2884E-74	1.9879E-62	1.4011E-50

P1 = 2.00E+01 N/SQ-M, US1= 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2171E+02	1.9008E+C2
T	3.1557E+00	4.5018E+00	5.2297E+C0
RHO	7.1505E+00	2.7039E+01	3.6310E+01
M	9.1903E-01	8.6219E-01	8.2804E-C1
A	1.7127E+00	2.0214E+00	2.1672E+C0
S	1.0645E+00	1.1125E+00	1.1310E+C0
Z	1.0000E+00	1.0000E+00	1.0009E+C0
GAME	9.1904E-01	9.0767E-01	8.9723E-C1
U	3.8201E+00	1.0096E+00	9.3400E-C1

SPECIES	-----	MOLE FRACTIONS	-----
E-	6.1777E-40	4.2063E-24	2.5338E-20
O	1.4084E-11	3.0282E-08	2.0009E-06
O+	3.4536E-23	3.0590E-29	1.1319E-26
O++	0.	0.	0.
O-	2.4877E-46	8.2769E-29	1.6369E-24
O2	4.3990E-04	4.8893E-04	1.3621E-02
O2+	1.7597E-18	1.7596E-18	1.7834E-18
O2-	4.0068E-42	6.6829E-27	6.1535E-23
C	8.2367E-42	1.1595E-27	9.0053E-25
C+	1.0779E-52	6.2032E-40	1.6115E-37
C++	0.	0.	0.
C-	3.9204E-78	2.2057E-49	3.8750E-43
CO	2.4301E-08	5.8107E-05	1.8471E-04
CO+	2.2845E-31	2.9076E-27	2.2281E-24
CO2	9.9946E-01	9.9941E-01	9.9679E-C1
C2	8.9341E-62	7.5228E-41	7.5375E-37

P1 = 2.00E+01 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1275E+C1	1.9499E+02	2.9013E+C2
T	3.8892E+C0	5.6184E+00	6.2871E+00
RHO	8.0420E+00	3.4621E+01	4.5705E+01
M	8.8932E-C1	8.0774E-01	7.6624E-C1
A	1.8828E+C0	2.2361E+00	2.3508E+00
S	1.1231E+C0	1.1470E+00	1.1666E+00
Z	1.0000E+00	1.0024E+00	1.0059E+C0
GAME	9.1247E-01	8.8767E-01	8.7040E-C1
U	4.5382E+00	1.0548E+00	9.4929E-01

SPECIES	-----	MOLE FRACTIONS	-----
F-	7.1886E-33	3.4585E-18	1.1057E-16
O	3.5967E-09	9.6963E-06	1.0684E-04
O+	1.4996E-30	1.1616E-24	9.8237E-22
O++	0.	0.	1.7537E-90
O-	1.1671E-38	1.2231E-21	3.4775E-19
O2	4.4259E-04	3.0652E-03	1.0177E-02
O2+	1.7597E-18	1.7183E-18	1.1035E-16
O2-	1.2224E-34	1.3701E-20	1.2038E-18
C	3.3260E-35	4.1663E-22	2.1057E-15
C+	1.4602E-46	6.5710E-34	7.7579E-30
C++	0.	1.1600E-82	2.3403E-73
C-	3.7839E-65	4.1803E-38	1.2553E-33
CO	5.3626E-06	5.2627E-03	1.9589E-02
CO+	1.9891E-28	6.5749E-23	2.6295E-20
CO2	9.9955E-01	9.9166E-01	9.7013E-01
C2	5.2158E-52	6.1062E-33	4.3377E-29

P1 = 2.00E+01 N/SQ-M, US1= 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1031E+01	2.9043E+02	4.1173E+02
T	4.6558E+00	4.5605E+00	7.0712E+C0
RHO	8.8117E+00	4.2564E+01	5.6386E+01
M	8.5507E-01	7.4439E-01	6.9688E-C1
A	2.0527E+00	2.3989E+00	2.4985E+C0
S	1.1512E+00	1.1818E+00	1.2027E+C0
Z	1.0002E+00	1.0162E+00	1.0326E+00
GAME	9.0483E-01	8.6314E-01	8.5494E-C1
U	5.2499E+00	1.0635E+00	9.7264E-01

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.5789E-22	1.5639E-15	3.6043E-14
O	2.0143E-07	2.7515E-04	9.9170E-04
O+	5.1792E-28	5.6784E-22	1.0323E-19
O++	0.	3.7686E-90	6.6730E-86
O-	2.9019E-27	9.5578E-19	4.5682E-17
O2	6.3689E-04	1.6145E-02	3.1024E-02
O2+	1.7592E-18	1.9768E-15	3.6374E-14
O2-	1.1213E-25	1.0247E-17	2.8648E-16
C	1.1328E-26	3.4288E-19	2.3642E-17
C+	2.6418E-39	2.3319E-30	1.4324E-27
C++	0.	4.2343E-73	1.8300E-69
C-	4.0282E-47	5.8534E-34	3.4524E-31
CO	3.9473E-04	2.1699E-02	6.2189E-02
CO+	1.5341E-24	5.6140E-20	2.9818E-18
CO2	9.9897E-01	9.9188E-01	9.0580E-C1
C2	1.3762E-39	1.4550E-30	8.1150E-27

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2176E+01	4.1384E+02	5.6218E+02
T	5.4343E+00	7.2742E+00	7.6850E+00
RHO	9.5757E+00	5.4519E+01	6.8565E+01
M	8.1621E-01	6.7178E-01	6.1887E-01
A	2.1985E+00	2.5432E+00	2.6357E+00
S	1.1787E+00	1.2182E+00	1.2405E+00
Z	1.0026E+00	1.0434E+00	1.0665E+00
GAME	8.8709E-01	8.5214E-01	8.4986E-01
U	5.9658E+00	1.0498E+00	9.6652E-01

SPECIES	MOLE FRACTIONS	
E-	8.5638E-19	1.0849E-13
O	1.1458E-05	1.6900E-03
O+	8.3068E-26	5.5588E-19
O++	0.	4.4168E-82
C-	4.5909E-23	1.7542E-16
OZ	3.0425E-03	4.0342E-02
OZ+	2.6124E-18	1.0956E-13
OZ-	8.8728E-22	9.0570E-16
C	1.9845E-23	1.0850E-16
C+	4.3249E-36	1.4042E-26
C++	2.2179E-88	1.7737E-66
C-	4.6045E-41	4.5644E-30
CO	5.2210E-03	8.1570E-02
CO+	8.1714E-24	1.2680E-17
CO2	9.9172E-01	8.7638E-01
C2	2.2864E-35	7.0508E-26

P1 = 2.00E+01 N/SC-M, US1 = 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4824E+01	5.7721E+02	7.4883E+02
T	6.1025E+00	7.8603E+00	8.2237E+00
RHO	1.0501E+01	6.7895E+01	8.3067E+01
M	7.7268E-01	5.8942E-01	5.3062E-01
A	2.3119E+00	2.6869E+00	2.7854E+00
S	1.2062E+00	1.2567E+00	1.2807E+00
Z	1.0114E+00	1.0817E+00	1.1108E+00
GAME	8.6593E-01	8.4913E-01	8.4927E-01
U	6.6962E+00	1.0376E+00	9.6803E-01

SPECIES	MOLE FRACTIONS	
E-	2.7366E-16	1.2161E-12
O	1.5511E-04	5.4108E-03
O+	9.5528E-23	1.1734E-17
O++	0.	4.6541E-73
C-	4.6854E-20	3.9176E-15
OZ	1.1530E-02	7.0489E-02
OZ+	2.7589E-16	1.3347E-12
OZ-	4.4029E-19	1.4981E-14
C	2.3389E-20	2.5051E-15
C+	6.4076E-32	3.2287E-24
C++	8.3469E-80	3.4294E-59
C-	2.0829E-36	1.8457E-27
CO	2.2346E-02	1.4558E-01
CO+	4.2635E-21	2.7150E-16
CO2	9.6597E-01	7.7853E-01
C2	2.6469E-31	2.2455E-24

P1 = 2.00E+01 N/SC-M, US1 = 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8991E+01	7.9033E+02	1.0140E+03
T	6.6252E+00	8.3892E+00	8.7302E+00
RHO	1.1597E+01	8.3444E+01	9.9829E+01
M	7.2450E-01	4.9727E-01	4.3189E-01
A	2.4107E+00	2.8361E+00	2.9398E+00
S	1.2342E+00	1.2574E+00	1.3224E+00
Z	1.0275E+00	1.1288E+00	1.1625E+00
GAME	8.5329E-01	8.4941E-01	8.5085E-01
U	7.4387E+00	1.0357E+00	9.7731E-01

SPECIES	MOLE FRACTIONS	
E-	8.0651E-15	1.0372E-11
O	7.9511E-04	1.2634E-02
O+	1.2955E-20	4.7436E-16
O++	1.1450E-90	2.8133E-71
C-	3.3006E-18	5.9827E-14
OZ	2.6765E-02	1.0184E-01
OZ+	8.0919E-15	1.0571E-11
OZ-	1.8121E-17	1.4441E-12
C	2.2870E-19	5.8569E-14
C+	5.2258E-29	1.7678E-22
C++	3.2848E-83	1.4578E-57
C-	3.0396E-33	1.1499E-25
CO	5.3469E-02	2.1553E-01
CO+	3.3647E-10	5.1464E-15
CO2	9.1857E-01	6.7000E-01
C2	1.4327E-28	4.6626E-22

P1 = 2.00E+01 N/SC-M, US1 = 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4621E+01	1.0556E+03	1.3311E+03
T	7.0458E+00	8.8859E+00	9.2243E+00
RHO	1.2777E+01	1.0042E+02	1.1789E+02
M	6.7170E-01	3.9567E-01	3.2291E-01
A	2.5051E+00	2.9930E+00	3.1049E+00
S	1.2634E+00	1.3404E+00	1.3683E+00
Z	1.0505E+00	1.1939E+00	1.2241E+00
GAME	8.4752E-01	8.5153E-01	8.5375E-01
U	8.1854E+00	1.0423E+00	9.9485E-01

SPECIES	MOLE FRACTIONS	
E-	8.4765E-16	5.1383E-11
O	2.3954E-03	2.4581E-02
O+	4.2525E-19	5.4023E-15
O++	3.4652E-84	6.5304E-67
C-	6.4798E-17	4.5480E-13
OZ	4.6435E-02	1.2112E-01
OZ+	8.5064E-14	5.2611E-11
OZ-	2.3957E-14	8.2250E-13
C	5.7907E-17	5.5823E-13
C+	6.9241E-27	5.4662E-21
C++	5.4227E-68	5.1633E-54
C-	4.1944E-31	4.5833E-24
CO	5.4432E-02	2.8608E-01
CO+	7.2073E-18	4.4175E-14
CO2	8.5673E-01	5.5822E-01
C2	1.3352E-26	1.1347E-20

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1168E+02	1.3775E+03	1.7124E+03
T	7.4024E+00	9.3707E+00	9.7200E+00
RHO	1.3980E+01	1.1794E+02	1.3632E+02
H	6.1431E-01	2.8491E-01	2.0376E-01
A	2.5987E+00	3.1594E+00	3.2823E+00
S	1.2938E+00	1.3855E+00	1.4155E+00
Z	1.0792E+00	1.2463E+00	1.2924E+00
GAME	8.4533E-01	8.5475E-01	8.5744E-01
U	8.9322E+00	1.0605E+00	1.0217E+00

SPECIES	MOLE FRACTIONS		
E-	4.5090E-13	2.0113E-10	4.9939E-10
O	5.4090E-03	4.2634E-02	5.9014E-02
O+	3.6664E-18	4.3592E-14	1.3476E-13
O++	1.0108E-78	2.0177E-63	8.3602E-60
O-	4.9308E-16	2.5093E-12	7.0875E-12
O2	6.8391E-02	1.5532E-01	1.6756E-01
O2+	4.5284E-13	2.0679E-10	4.7414E-10
O2-	1.5000E-15	3.4798E-12	8.6220E-12
C	4.7747E-16	3.8485E-12	1.1661E-11
C+	2.7112E-26	1.0124E-19	3.1424E-19
C++	1.2308E-63	3.8645E-51	2.5179E-48
C-	6.5168E-31	1.0157E-22	4.2431E-22
CO	1.4138E-01	3.5257E-01	3.9345E-01
CO+	5.5561E-17	2.8021E-13	8.1577E-13
CO2	7.8482E-01	4.4947E-01	3.7998E-01
C2	1.2984E-25	1.7096E-19	6.9337E-19

P1 = 2.00E+01 N/SQ-M, US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4995E+02	2.1794E+03	2.6635E+03
T	8.0215E+00	1.0352E+01	1.0756E+01
RHO	1.6271E+01	1.5135E+02	1.7073E+02
H	4.8581E-01	3.6553E-02	-6.4266E-02
A	2.751CF+00	3.5267E+00	3.6798E+00
S	1.3585E+00	1.4809E+00	1.5155E+00
Z	1.1488E+00	1.3912E+00	1.4505E+00
GAME	8.4528E-01	8.6367E-01	8.6791E-01
U	1.0418E+01	1.1215E+00	1.0962E+00

SPECIES	MOLE FRACTIONS		
E-	6.5776E-12	1.5428E-09	4.3226E-09
O	1.7416E-02	1.0304E-01	1.3460E-01
O+	2.5813E-16	1.1828E-12	5.2561E-12
O++	1.9489E-73	1.1628E-54	8.0723E-54
O-	1.4971E-14	4.0030E-11	1.0515E-10
O2	1.1250E-01	1.7842E-01	1.7624E-01
O2+	6.6167E-12	2.0095E-09	4.4732E-09
O2-	2.6447E-14	3.3652E-11	7.0391E-11
C	2.2203E-14	8.8921E-11	3.2423E-10
C+	4.4311E-22	3.8772E-18	6.9913E-17
C++	2.9221E-59	5.1210E-44	2.2961E-44
C-	7.5407E-27	4.8649E-21	9.9523E-20
CO	2.4165E-01	4.5926E-01	4.8650E-01
CO+	2.1147E-15	5.7885E-12	1.9741E-11
CO2	4.2843E-01	2.5928E-01	2.0265E-01
C2	4.7661E-23	8.4366E-18	7.9789E-17

P1 = 2.00E+01 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3012E+02	1.7519E+03	2.1561E+03
T	7.7239E+00	9.8557E+00	1.0227E+01
RHO	1.5151E+01	1.3511E+02	1.5414E+02
H	5.5235E-01	1.6518E-01	7.4794E-02
A	2.6936E+00	3.3368E+00	3.4732E+00
S	1.3257E+00	1.4324E+00	1.4646E+00
Z	1.1120E+00	1.3154E+00	1.3678E+00
GAME	8.4478E-01	8.5883E-01	8.6236E-01
U	9.6765E+00	1.0866E+00	1.0542E+00

SPECIES	MOLE FRACTIONS		
E-	1.9414E-12	6.6766E-10	1.4739E-09
O	1.0268E-02	6.8283E-02	9.1527E-02
O+	3.7508E-17	2.7732E-13	8.7954E-13
O++	1.4913E-74	1.8506E-60	1.0923E-56
O-	3.2020E-15	1.0587E-11	2.9278E-11
O2	5.0807E-02	1.7185E-01	1.7769E-01
O2+	1.9515E-12	6.8871E-10	1.5249E-09
O2-	7.2553E-15	1.1789E-11	2.6768E-11
C	3.8827E-15	2.1257E-11	6.4259E-11
C+	2.1508E-24	1.3275E-18	4.8912E-18
C++	2.0735E-60	1.1161E-48	9.5111E-46
C-	2.9527E-28	1.5011E-21	7.1503E-21
CO	1.9109E-01	4.1132E-01	4.4627E-01
CO+	4.0482E-16	1.4420E-12	4.1923E-12
CO2	7.0783E-01	3.4854E-01	2.8451E-01
C2	3.5559E-24	1.8494E-18	7.9265E-18

P1 = 2.00E+01 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7115E+02	2.6590E+03	3.2351E+03
T	8.3025E+00	1.0869E+01	1.1319E+01
RHO	1.7330E+01	1.6609E+02	1.8558E+02
H	4.1470E-01	-1.0091E-01	-2.1287E-01
A	2.8915E+00	3.7306E+00	3.9042E+00
S	1.3925E+00	1.5307E+00	1.5678E+00
Z	1.1856E+00	1.4732E+00	1.5401E+00
GAME	8.4648E-01	8.6923E-01	8.7437E-01
U	1.1157E+01	1.1657E+00	1.1480E+00

SPECIES	MOLE FRACTIONS		
E-	1.7724E-11	5.4000E-09	1.1805E-08
O	2.7321E-02	1.4777E-01	1.8865E-01
O+	8.4070E-16	7.0141E-12	2.9677E-11
O++	8.0822E-69	1.6145E-52	3.7592E-51
O-	4.9775E-14	1.3312E-10	3.3115E-10
O2	1.3241E-01	1.7369E-01	1.6232E-01
O2+	1.7842E-11	5.5823E-09	1.2176E-08
O2-	7.6623E-14	8.2198E-11	1.5809E-10
C	7.5661E-14	4.2972E-10	1.5577E-09
C+	9.2435E-23	4.3863E-17	9.7015E-16
C++	1.6662E-55	3.3256E-42	3.8116E-41
C-	1.1296E-26	1.1745E-19	1.1925E-18
CO	2.9139E-01	4.9455E-01	5.1275E-01
CO+	7.0253E-15	2.5993E-11	8.8775E-11
CO2	5.4688E-01	1.8400E-01	1.3627E-01
C2	1.1861E-22	9.8407E-17	7.4682E-16

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1 = 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9371E+02	3.1852E+03	3.8661E+03
T	8.5780E+00	1.1416E+01	1.1930E+01
RHO	1.8299E+01	1.7873E+02	1.9802E+02
M	3.3903E-01	-2.4708E-01	-3.7386E-01
A	2.9962E+00	3.9504E+00	4.1501E+00
S	1.4294E+00	1.5816E+00	1.6214E+00
Z	1.2340E+00	1.5611E+00	1.6265E+00
GAME	8.4811E-01	8.7567E-01	8.8216E-01
U	1.1893E+01	1.2192E+00	1.2103E+00

SPECIES	MOLE FRACTIONS		
E-	4.7652E-11	1.4219E-08	3.0540E-08
O	4.0503E-02	2.0215E-01	2.5247E-01
O+	5.3986E-15	4.3991E-11	1.6458E-10
O++	1.7412E-68	3.5346E-51	7.6644E-49
O-	1.7331E-13	3.9379E-10	9.2715E-10
O2	1.4946E-01	1.5756E-01	1.3672E-01
O2+	4.7993E-11	1.4618E-08	3.1205E-08
O2-	2.0342E-13	1.7123E-10	3.0215E-10
C	3.6017E-13	2.1742E-09	7.4812E-09
C+	3.0894E-21	2.0916E-15	1.3572E-14
C++	3.8343E-45	4.8668E-41	2.3756E-39
C-	6.4270E-25	2.0570E-18	1.3109E-17
CO	3.3872E-01	3.1671E-01	5.2538E-01
CO+	3.0194E-14	1.2176E-10	3.9931E-10
CO2	4.7131E-01	1.2358E-01	8.5424E-02
C2	2.2930E-21	1.2427E-15	7.0227E-15

P1 = 2.00E+01 N/SQ-M, US1 = 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4289E+02	4.2650E+03	5.3072E+03
T	9.1180E+00	1.2677E+01	1.3506E+01
RHO	1.9974E+01	1.9653E+02	2.1315E+02
M	1.7396E-01	-5.6542E-01	-7.2790E-01
A	3.2156E+00	4.4556E+00	4.7613E+00
S	1.5046E+00	1.6853E+00	1.7308E+00
Z	1.3335E+00	1.7520E+00	1.8437E+00
GAME	8.5255E-01	8.5384E-01	9.1043E-01
U	1.3357E+01	1.3591E+00	1.3822E+00

SPECIES	MOLE FRACTIONS		
E-	2.4449E-10	8.3250E-08	2.0748E-07
O	7.8787E-02	3.3260E-01	3.9606E-01
O+	7.0996E-14	1.1149E-09	6.9744E-09
O++	3.1551E-64	8.0972E-47	2.5391E-42
O-	1.2497E-12	2.4357E-09	5.6582E-09
O2	1.7166E-01	9.6875E-02	6.1796E-02
O2+	2.4637E-10	8.2828E-08	1.9449E-07
O2-	9.8976E-13	4.6806E-10	6.3531E-10
C	3.7679E-12	4.4671E-08	2.7262E-07
C+	1.1529E-19	2.8102E-12	6.3846E-12
C++	1.3295E-51	5.6691E-37	3.0039E-33
C-	2.5676E-23	1.6403E-16	2.1331E-15
CO	4.2144E-01	5.2585E-01	5.1618E-01
CO+	2.8458E-13	2.2101E-09	1.2308E-08
CO2	3.2811E-01	4.4674E-02	2.2959E-02
C2	5.9105E-20	8.6110E-14	1.2294E-12

P1 = 2.00E+01 N/SQ-M, US1 = 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1763E+02	3.7571E+03	4.5587E+03
T	8.8471E+00	1.2009E+01	1.2627E+01
RHO	1.9189E+01	1.8909E+02	2.0765E+02
M	2.5878E-01	-4.0197E-01	-5.4488E-01
A	3.1052E+00	4.1855E+00	4.4268E+00
S	1.4664E+00	1.6333E+00	1.6758E+00
Z	1.2820E+00	1.6544E+00	1.7286E+00
GAME	8.5017E-01	8.8346E-01	8.9265E-01
U	1.2627E+01	1.2829E+00	1.2861E+00

SPECIES	MOLE FRACTIONS		
E-	1.0699E-10	3.5104E-08	7.7403E-08
O	5.7495E-02	2.6473E-01	3.2316E-01
O+	1.5098E-14	2.2980E-10	9.6838E-10
O++	1.2977E-64	2.0871E-48	8.7358E-46
O-	4.5884E-13	1.0304E-09	2.3569E-09
O2	1.6281E-01	1.3114E-01	1.0191E-01
O2+	1.0782E-10	3.5687E-08	7.7327E-08
O2-	4.6531E-13	3.0661E-10	4.8645E-10
C	1.0104E-12	9.5808E-09	3.9429E-08
C+	2.7344E-21	2.6623E-14	2.4370E-13
C++	5.0488E-52	1.3490E-38	2.2055E-36
C-	1.2471E-24	2.0128E-17	1.4876E-16
CO	3.8242E-01	5.2647E-01	5.2647E-01
CO+	8.2545E-14	5.2365E-10	1.9509E-09
CO2	3.9728E-01	7.7672E-02	4.8464E-02
C2	6.5294E-21	1.0863E-14	7.6625E-14

P1 = 2.00E+01 N/SQ-M, US1 = 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6950E+02	5.0045E+03	6.1238E+03
T	9.3903E+00	1.3511E+01	1.4917E+01
RHO	2.0671E+01	2.0017E+02	2.1136E+02
M	8.4562E-02	-7.3739E-01	-9.2661E-01
A	3.3394E+00	4.7733E+00	5.2630E+00
S	1.5438E+00	1.7371E+00	1.7860E+00
Z	1.3885E+00	1.8505E+00	1.9423E+00
GAME	8.5526E-01	9.1133E-01	9.5600E-01
U	1.4085E+01	1.4561E+00	1.5292E+00

SPECIES	MOLE FRACTIONS		
E-	4.9652E-10	2.0974E-07	7.7616E-07
O	1.0494E-01	4.0076E-01	4.6255E-01
O+	1.9046E-13	7.0888E-09	9.2175E-08
O++	7.0397E-61	4.4964E-43	6.5606E-38
O-	2.8864E-12	5.4731E-09	1.4936E-08
O2	1.7517E-01	5.9080E-02	2.2824E-02
O2+	5.0042E-10	1.5628E-07	5.4554E-07
O2-	1.9239E-12	5.8383E-10	6.1019E-10
C	9.7560E-12	2.7374E-07	4.2116E-06
C+	2.3911E-19	5.8647E-12	5.5412E-10
C++	4.4520E-49	8.5864E-34	3.4240E-29
C-	7.7234E-23	1.9673E-15	7.6574E-14
CO	4.5466E-01	5.1845E-01	5.0774E-01
CO+	7.1583E-13	1.2422E-08	1.5343E-07
CO2	2.6525E-01	2.1709E-02	6.8728E-02
C2	1.7828E-19	1.1409E-12	6.1258E-11

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9743E+02	5.6536E+03	7.0398E+03
T	9.6697E+00	1.4782E+01	1.8198E+01
RHO	2.1257E+01	1.5714E+02	1.9289E+02
H	-9.4000E-03	-9.1721E-01	-1.1527E+00
A	3.4652E+00	5.2279E+00	6.1089E+00
S	1.5840E+00	1.7877E+00	1.8404E+00
Z	1.4465E+00	1.9400E+00	1.9952E+00
GAME	8.5827E-01	9.9306E-01	1.0278E+00
U	1.4810E+01	1.5985E+00	1.8207E+00

SPECIES	MOLE FRACTIONS		
E-	1.0203E-09	6.5639E-07	1.4726E-05
O	1.3604E-01	4.6103E-01	4.9651E-01
O+	7.3649E-13	7.7698E-08	4.2827E-08
O++	2.3443E-00	1.0693E-28	2.7061E-30
O-	6.6402E-12	1.3106E-08	1.0644E-07
O2	1.7315E-01	2.3724E-02	2.4860E-03
O2+	1.0275E-09	5.0346E-07	1.1994E-06
O2-	2.4693E-12	5.5183E-10	5.6118E-10
C	3.1511E-11	3.4425E-06	7.1474E-04
C+	2.2393E-18	3.9179E-10	1.3264E-06
C++	2.3767E-48	8.1771E-30	4.9927E-22
C-	5.7901E-22	5.3990E-14	9.3928E-11
CO	4.8173E-01	5.0804E-01	4.9961E-01
CO+	2.1706E-12	1.2850E-07	8.0234E-06
CO2	2.0908E-01	7.1969E-03	6.5312E-04
C2	1.1128E-18	4.2355E-11	1.0628E-07

P1 = 2.00E+01 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2670E+02	6.2772E+03	7.9748E+03
T	9.9566E+00	1.7304E+01	2.1016E+01
RHO	2.1750E+01	1.8224E+02	1.8684E+02
H	-1.0793E-01	-1.1039E+00	-1.3845E+00
A	3.5976E+00	5.6635E+00	6.2478E+00
S	1.6250E+00	1.8345E+00	1.8854E+00
Z	1.5087E+00	1.9905E+00	2.0310E+00
GAME	8.6161E-01	1.0325E+00	9.1453E-01
U	1.5533E+01	1.8554E+00	2.0464E+00

SPECIES	MOLE FRACTIONS		
E-	1.9435E-09	6.9200E-06	1.5858E-04
O	1.7245E-01	4.9388E-01	5.0703E-01
O+	2.0083E-12	2.0163E-06	2.4767E-05
O++	1.3751E-57	5.8937E-32	3.9649E-26
O-	1.3816E-11	5.5229E-08	6.0382E-07
O2	1.6499E-01	3.9447E-03	6.3912E-04
O2+	1.9558E-09	1.0794E-06	1.0839E-06
O2-	5.8515E-12	4.7003E-10	9.3790E-10
C	8.0385E-11	2.2882E-04	1.5796E-02
C+	1.0472E-17	2.6178E-07	8.3746E-05
C++	3.5598E-46	1.4690E-23	3.7795E-18
C-	2.4527E-21	1.6522E-11	1.2128E-08
CO	5.0185E-01	5.0087E-01	4.7609E-01
CO+	5.3541E-12	3.6222E-06	4.9596E-05
CO2	1.6070E-01	1.0553E-03	1.5319E-04
C2	3.6671E-18	1.9463E-08	9.6343E-06

P1 = 2.00E+01 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5728E+02	6.9022E+03	8.8758E+03
T	1.0257E+01	2.0208E+01	2.2258E+01
RHO	2.2134E+01	1.6956E+02	1.9105E+02
H	-2.1103E-01	-1.2983E+00	-1.6079E+00
A	3.7374E+00	6.1909E+00	6.4255E+00
S	1.6668E+00	1.8752E+00	1.9252E+00
Z	1.5736E+00	2.0144E+00	2.0873E+00
GAME	8.6539E-01	9.4152E-01	8.8870E-01
U	1.6252E+01	2.1245E+00	2.1357E+00

SPECIES	MOLE FRACTIONS		
E-	3.7007E-09	8.7477E-05	4.0226E-04
O	2.1347E-01	5.0289E-01	5.2027E-01
O+	4.7275E-12	1.7123E-05	4.1771E-05
O++	9.3502E-57	3.9919E-27	1.0143E-24
O-	2.7898E-11	3.5237E-07	1.3022E-06
O2	1.5135E-01	8.0655E-04	4.3167E-04
O2+	3.7160E-09	1.0810E-06	1.0144E-06
O2-	9.1331E-12	6.6866E-10	1.4155E-09
C	2.3725E-10	8.0391E-03	4.1607E-02
C+	8.0689E-17	3.5468E-05	2.8303E-04
C++	2.7546E-45	5.1092E-15	6.4053E-17
C-	1.3906E-20	3.5885E-09	6.8397E-08
CO	5.1561E-01	4.8789E-01	4.3675E-01
CO+	1.5008E-11	3.4162E-05	7.8822E-05
CO2	1.1957E-01	2.0078E-04	9.1882E-05
C2	1.8039E-17	3.4525E-06	3.8701E-05

P1 = 2.00E+01 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8917E+02	7.6055E+03	9.7710E+03
T	1.0575E+01	2.1674E+01	2.3097E+01
RHO	2.2417E+01	1.7024E+02	1.9669E+02
H	-3.1870E-01	-1.4036E+00	-1.8347E+00
A	3.8858E+00	6.2231E+00	6.6207E+00
S	1.7092E+00	1.5133E+00	1.9642E+00
Z	1.6417E+00	2.0612E+00	2.1509E+00
GAME	8.6974E-01	8.9498E-01	8.8236E-01
U	1.6969E+01	2.2381E+00	2.1826E+00

SPECIES	MOLE FRACTIONS		
E-	6.7959E-09	2.8502E-04	7.0230E-04
O	2.5876E-01	5.1430E-01	5.2424E-01
O+	2.0130E-11	3.3801E-05	5.7939E-05
O++	8.5930E-57	2.4321E-25	7.3559E-24
O-	5.3078E-11	8.5378E-07	2.1238E-06
O2	1.3238E-01	4.6492E-04	3.7272E-04
O2+	6.8065E-09	9.6607E-07	1.0189E-06
O2-	1.3305E-11	1.0285E-09	1.9310E-09
C	6.5232E-10	2.5766E-02	6.9255E-02
C+	4.1460E-16	1.8561E-04	5.4616E-04
C++	1.2280E-43	2.0650E-17	3.2894E-16
C-	6.0580E-20	3.3694E-08	1.8282E-07
CO	5.2298E-01	4.5477E-01	3.9459E-01
CO+	3.9626E-11	6.5578E-05	9.9485E-05
CO2	8.5890E-02	1.0457E-04	6.6682E-05
C2	7.3231E-17	2.2870E-05	7.8841E-05

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2234E+02	8.3346E+03	1.0662E+04
T	1.0920E+01	2.2589E+01	2.3789E+01
RHO	2.2584E+01	1.7408E+02	2.0193E+02
H	-4.3092E-01	-1.7181E+00	-2.0700E+00
A	4.0453E+00	6.5050E+00	6.8146E+00
S	1.7520E+00	1.9512E+00	2.0036E+00
Z	1.7124E+00	2.1196E+00	2.2194E+00
GAME	8.7512E-01	8.8382E-01	8.8079E-01
U	1.7682E+01	2.2582E+00	2.2268E+00

SPECIES	MOLE FRACTIONS		
E-	1.2311E-08	5.4697E-04	1.0566E-03
O	3.0714E-01	5.2751E-01	5.4833E-01
O+	5.7732E-11	4.8795E-05	7.5768E-05
O++	1.3305E-51	2.3574E-24	3.3639E-23
O-	9.6792E-11	1.5593E-06	3.0865E-06
O2	1.0914E-01	3.6352E-04	3.1627E-04
O2+	1.2265E-08	9.4263E-07	1.0570E-06
O2-	1.7921E-11	1.4291E-09	2.4913E-09
C	1.7554E-09	5.5832E-02	9.7242E-02
C+	1.3707E-15	4.1142E-04	8.6730E-04
C++	6.0795E-41	1.4104E-16	1.1097E-15
C-	2.2917E-19	1.0887E-07	3.6662E-07
CO	5.2491E-01	4.1507E-01	3.5182E-01
CO+	1.0304E-10	8.7477E-05	1.1599E-04
CO2	5.8814E-02	7.2421E-05	5.1181E-05
C2	2.5647E-16	5.5607E-05	1.2419E-04

P1 = 2.00E+01 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5875E+02	9.0527E+03	1.1522E+04
T	1.1314E+01	2.2301E+01	2.4410E+01
RHO	2.2615E+01	1.7790E+02	2.0595E+02
H	-5.4765E-01	-1.9411E+00	-2.3135E+00
A	4.2221E+00	6.6935E+00	7.0211E+00
S	1.7952E+00	1.9846E+00	2.0438E+00
Z	1.7851E+00	2.1838E+00	2.2920E+00
GAME	8.8265E-01	8.8058E-01	8.8112E-01
U	1.8391E+01	2.3419E+00	2.2684E+00

SPECIES	MOLE FRACTIONS		
E-	2.2913E-08	8.6076E-04	1.4725E-03
O	3.5710E-01	5.4115E-01	5.6220E-01
O+	2.1576E-10	6.4508E-05	9.6400E-05
O++	9.0413E-51	1.2363E-23	1.3437E-22
O-	1.7189E-10	2.3371E-06	4.1972E-06
O2	8.2957E-02	3.1386E-04	2.8757E-04
O2+	2.2552E-08	9.5981E-07	1.1135E-06
O2-	2.1988E-11	1.8955E-09	3.0848E-09
C	6.1214E-09	8.2902E-02	1.2483E-01
C+	1.7220E-14	6.9346E-04	1.2502E-03
C++	4.3901E-40	5.3814E-16	3.1451E-15
C-	1.4022E-18	2.3824E-07	6.2846E-07
CO	5.2252E-01	7.7376E-01	3.0953E-01
CO+	3.3911E-10	1.0441E-04	1.2969E-04
CO2	3.7425E-02	5.4734E-05	3.9823E-05
C2	1.6954E-16	5.5284E-05	1.6960E-04

P1 = 2.00E+01 N/SQ-M, US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9233E+02	9.7203E+03	1.2213E+04
T	1.1797E+01	2.3914E+01	2.4991E+01
RHO	2.2458E+01	1.8048E+02	2.0807E+02
H	-6.6859E-01	-2.1717E+00	-2.5656E+00
A	4.4252E+00	6.8845E+00	7.2266E+00
S	1.8384E+00	2.0288E+00	2.0851E+00
Z	1.8583E+00	2.2522E+00	2.3678E+00
GAME	8.9488E-01	8.8003E-01	8.8256E-01
U	1.9092E+01	2.3797E+00	2.3151E+00

SPECIES	MOLE FRACTIONS		
E-	4.4736E-08	1.2278E-03	1.9637E-03
O	4.0657E-01	5.4725E-01	5.7571E-01
O+	8.8274E-10	8.2181E-05	1.2130E-04
O++	3.1680E-48	4.8911E-23	4.6350E-22
O-	3.0040E-10	1.2236E-06	5.4593E-06
O2	5.5143E-02	2.8176E-04	2.6430E-04
O2+	4.7699E-08	9.5452E-07	1.1814E-06
O2-	2.3962E-11	2.3055E-09	2.6895E-09
C	2.4456E-08	1.0990E-01	1.5175E-01
C+	1.8073E-13	1.0302E-03	1.7047E-03
C++	8.7781E-38	1.5724E-15	7.8816E-15
C-	8.9126E-18	4.2825E-07	9.7447E-07
CO	5.1678E-01	3.7246E-01	2.6809E-01
CO+	1.2767E-09	1.1815E-04	1.4094E-04
CO2	2.1111E-02	4.2541E-05	3.0801E-05
C2	1.2758E-14	1.7689E-04	2.1142E-04

P1 = 2.00E+01 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2887E+02	1.0248E+04	1.2918E+04
T	1.2482E+01	2.4461E+01	2.5539E+01
RHO	2.1975E+01	1.8031E+02	2.0680E+02
H	-7.9475E-01	-2.4086E+00	-2.8232E+00
A	4.7078E+00	7.0753E+00	7.4342E+00
S	1.8810E+00	2.0692E+00	2.1215E+00
Z	1.9280E+00	2.3235E+00	2.4458E+00
GAME	9.2094E-01	8.8078E-01	8.8479E-01
U	1.9779E+01	2.4144E+00	2.3552E+00

SPECIES	MOLE FRACTIONS		
E-	1.0045E-07	1.6538E-03	2.5428E-03
O	4.5348E-01	5.6797E-01	5.8842E-01
O+	5.0640E-09	1.0259E-04	1.5155E-04
O++	2.0666E-44	1.6095E-22	1.4523E-21
O-	5.4308E-10	4.1918E-06	6.8261E-06
O2	2.8076E-02	2.5645E-04	2.4243E-04
O2+	8.8971E-08	1.0400E-06	1.2513E-06
O2-	2.1710E-11	2.7246E-09	4.2218E-09
C	1.4558E-07	1.3628E-01	1.7751E-01
C+	2.8315E-12	1.4260E-03	2.2487E-03
C++	2.1900E-34	3.9084E-15	1.8187E-14
C-	8.3704E-17	6.7871E-07	1.4048E-06
CO	5.0918E-01	2.9197E-01	2.2825E-01
CO+	6.9742E-09	1.2911E-04	1.4948E-04
CO2	9.2601E-03	3.3164E-05	2.3560E-05
C2	1.4060E-13	1.7597E-04	2.4508E-04

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SQ-M, US1= 5.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6566E+02	1.0387E+04	1.3028E+04
T	1.3757E+01	2.4933E+01	2.6036E+01
RHO	2.0759E+01	1.7383E+02	1.9818E+02
H	-9.2475E-01	-2.6473E+00	-3.0817E+00
A	5.2046E+00	7.2605E+00	7.6386E+00
S	1.9219E+00	2.1117E+00	2.1719E+00
Z	1.9808E+00	2.3567E+00	2.5249E+00
GAME	9.9408E-01	8.8218E-01	8.8759E-01
U	2.0428E+01	2.4433E+00	2.3925E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.1584E-07	2.1423E-03	3.2266E-03
O	4.8784E-01	5.8064E-01	6.0074E-01
O+	8.2361E-08	1.2582E-04	1.8798E-04
O++	5.2154E-40	4.4283E-22	4.0772E-21
O-	1.3195E-09	5.1256E-06	8.1279E-06
O2	7.5797E-03	2.3133E-04	2.1801E-04
O2+	2.1676E-07	1.6700E-06	1.3020E-06
O2-	1.5062E-11	2.9949E-09	4.5112E-09
C	3.5380E-06	1.6153E-01	2.0174E-01
C+	6.6975E-10	1.8850E-03	2.8930E-03
C++	3.7382E-30	8.5054E-15	3.8832E-14
C-	5.1936E-15	9.6716E-07	1.8718E-06
CO	5.0244E-01	2.5307E-01	1.9054E-01
CO+	1.1738E-07	1.3659E-04	1.5425E-04
CO2	2.1869E-03	2.5336E-05	1.7312E-05
C2	1.5820E-11	2.6800E-04	2.6504E-04

P1 = 2.00E+01 N/SQ-M, US1= 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0191E+02	9.9912E+03	1.2465E+04
T	1.6106E+01	2.5216E+01	2.6464E+01
RMC	1.8701E+01	1.5788E+02	1.8094E+02
H	-1.0587E+00	-2.8827E+00	-3.3347E+00
A	5.8016E+00	7.4347E+00	7.8243E+00
S	1.9588E+00	2.1565E+00	2.2185E+00
Z	1.9987E+00	2.4701E+00	2.6031E+00
GAME	1.0458E+00	8.8294E-01	8.9094E-01
U	2.1015E+01	2.4633E+00	2.4237E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2885E-06	2.6956E-03	4.0322E-03
O	4.9885E-01	5.9249E-01	6.1182E-01
O+	2.0308E-06	1.5165E-04	2.3127E-04
O++	1.1765E-22	1.0105E-21	1.0119E-20
O-	7.5848E-09	5.8792E-06	9.1581E-06
O2	9.3036E-04	2.0417E-04	1.9012E-04
O2+	3.3465E-07	1.0723E-06	1.3171E-06
O2-	1.3718E-11	3.0144E-09	4.4200E-09
C	2.4714E-04	1.8519E-01	2.2394E-01
C+	5.8137E-07	2.4100E-03	3.6567E-03
C++	4.1800E-24	1.6383E-14	7.6698E-14
C-	3.1899E-12	1.2513E-06	2.3081E-06
CO	4.9960E-01	2.1647E-01	1.5568E-01
CO+	3.3476E-06	1.3907E-04	1.5445E-04
CO2	2.5250E-04	1.8730E-05	1.2102E-05
C2	1.2138E-08	2.2475E-04	2.6744E-04

P1 = 2.00E+01 N/SQ-M, US1= 6.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4015E+02	9.5741E+03	1.2296E+04
T	1.8153E+01	2.5771E+01	2.7019E+01
RHO	1.7510E+01	1.5200E+02	1.7084E+02
H	-1.1973E+00	-3.1307E+00	-3.6041E+00
A	5.8413E+00	7.6281E+00	8.0636E+00
S	1.9914E+00	2.2002E+00	2.2647E+00
Z	2.0140E+00	2.5463E+00	2.6855E+00
GAME	9.3331E-01	8.8675E-01	8.9612E-01
U	2.1691E+01	2.4954E+00	2.4692E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2064E-05	3.3795E-03	5.1129E-03
O	5.0338E-01	6.0393E-01	6.2247E-01
O+	1.0489E-05	1.8647E-04	2.9564E-04
O++	1.3595E-29	2.8244E-21	3.0422E-20
O-	4.1937E-08	6.8823E-06	1.0654E-05
O2	2.2938E-04	1.8318E-04	1.6648E-04
O2+	2.8088E-07	1.1082E-06	1.3776E-06
O2-	2.0902E-11	3.1612E-09	4.5125E-09
C	7.1467E-03	2.0807E-01	2.4539E-01
C+	3.2413E-05	3.0572E-03	4.6552E-03
C++	2.6841E-20	3.4105E-14	1.6904E-13
C-	3.6321E-10	1.6220E-06	2.9062E-06
CO	4.8905E-01	1.8079E-01	1.2145E-01
CO+	1.8923E-05	1.4316E-04	1.5429E-04
CO2	6.0757E-05	1.3745E-05	8.1206E-06
C2	9.9703E-07	2.3818E-04	2.6320E-04

P1 = 2.00E+01 N/SQ-M, US1= 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.8172E+02	1.0556E+04	1.3097E+04
T	1.9163E+01	2.6364E+01	2.7790E+01
RHO	1.7377E+01	1.5241E+02	1.7008E+02
H	-1.3412E+00	-3.4000E+00	-3.9019E+00
A	5.9040E+00	7.8562E+00	8.3456E+00
S	2.0221E+00	2.2423E+00	2.3085E+00
Z	2.0472E+00	2.6271E+00	2.7711E+00
GAME	8.8857E-01	8.9113E-01	9.0446E-01
U	2.2318E+01	2.5481E+00	2.5398E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.8316E-04	4.2759E-03	6.6672E-03
O	5.1141E-01	6.1508E-01	6.3231E-01
O+	1.7879E-05	2.3770E-04	4.0155E-04
O++	4.4284E-28	9.2463E-21	1.2891E-19
O-	9.8878E-08	8.4198E-06	1.2073E-05
O2	1.4422E-04	1.6765E-04	1.4652E-04
O2+	2.3581E-07	1.1990E-06	1.5159E-06
O2-	3.1070E-11	3.5518E-09	4.9244E-09
C	2.2920E-02	2.3046E-01	2.6536E-01
C+	1.3334E-04	3.9004E-03	6.1268E-03
C++	6.3071E-19	7.8171E-14	4.5342E-13
C-	2.7667E-09	2.1702E-06	3.8214E-06
CO	4.6512E-01	1.4547E-01	8.8561E-02
CO+	3.1811E-05	1.4714E-04	1.5422E-04
CO2	3.3940E-05	9.266E-06	5.1230E-06
C2	5.3688E-06	2.4873E-04	2.5152E-04

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2526E+02	1.1351E+04	1.4083E+04
T	1.9754E+01	2.7040E+01	2.8814E+01
RHC	1.7550E+01	1.5478E+02	1.7052E+02
H	-1.4900E+00	-3.4824E+00	-4.2189E+00
A	4.0166E+00	8.1126E+00	8.6979E+00
S	2.0527E+00	2.2841E+00	2.3532E+00
Z	2.0881E+00	2.7102E+00	2.8595E+00
GAME	8.7565E-01	8.5743E-01	9.1818E-01
U	2.3020E+01	2.6147E+00	2.6322E+00

SPECIES ----- MOLE FRACTIONS -----

E-	3.3904E-04	5.4750E-03	5.1413E-03
O	5.2084E-01	6.2548E-01	6.4070E-01
O+	2.4030E-05	3.1321E-04	5.9319E-04
O++	3.1523E-27	2.5768E-20	8.0565E-19
O-	1.6815E-07	1.0423E-05	1.5526E-05
O2	1.1277E-04	1.5215E-04	1.2387E-04
O2+	2.1845E-07	1.3225E-06	1.7181E-06
O2-	4.1553E-11	4.0209E-09	5.7664E-09
C	4.1655E-02	2.5146E-01	2.8292E-01
C+	2.7435E-04	5.0240E-03	8.4172E-03
C++	3.4554E-18	1.9536E-13	1.5482E-12
C-	8.4054E-09	2.9005E-06	5.1229E-06
CO	4.3654E-01	1.1148E-01	5.7613E-02
CO+	4.0533E-05	1.4575E-04	1.5091E-04
CO2	2.4374E-05	6.7907E-06	2.7751E-06
C2	1.2573E-05	2.4560E-04	2.2301E-04

P1 = 2.00E+01 N/SC-M, US1 = 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1738E+02	1.2195E+04	1.6471E+04
T	2.0688E+01	2.8904E+01	3.2203E+01
RHC	1.8122E+01	1.5869E+02	1.6014E+02
H	-1.8015E+00	-4.2767E+00	-4.9117E+00
A	6.2596E+00	8.7513E+00	9.7036E+00
S	2.1147E+00	2.7672E+00	2.4417E+00
Z	2.1802E+00	2.8766E+00	3.0241E+00
GAME	8.6861E-01	9.2104E-01	9.6689E-01
U	2.4472E+01	2.7580E+00	2.9281E+00

SPECIES ----- MOLE FRACTIONS -----

E-	7.2634E-04	9.7530E-03	2.1965E-02
O	5.4073E-01	6.4221E-01	6.4559E-01
O+	3.6235E-05	6.2510E-04	1.9259E-03
O++	4.2357E-26	1.0118E-18	1.7370E-16
O-	2.2862E-07	1.6318E-05	2.8416E-05
O2	8.7126E-05	1.1394E-04	6.8466E-05
O2+	2.1374E-07	1.6763E-06	2.4193E-06
O2-	6.4180E-11	4.8772E-09	5.5732E-09
C	8.1412E-02	2.8500E-01	2.0538E-01
C+	6.3701E-04	8.9916E-03	1.9945E-02
C++	2.8846E-17	1.8512E-12	5.3965E-11
C-	3.1748E-08	5.1041E-06	9.7575E-06
CO	5.7627E-01	5.2018E-02	1.2545E-02
CO+	5.3164E-05	1.4597E-04	1.2584E-04
CO2	1.5513E-05	2.2922E-04	3.5475E-07
C2	3.1604E-05	2.7580E-04	1.1401E-04

P1 = 2.00E+01 N/SC-M, US1 = 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.7063E+02	1.2244E+04	1.5216E+04
T	2.0277E+01	2.7881E+01	3.0209E+01
RHC	1.7919E+01	1.5718E+02	1.7104E+02
H	-1.6435E+00	-3.9750E+00	-4.5539E+00
A	6.1366E+00	8.4029E+00	9.1464E+00
S	2.0833E+00	2.3257E+00	2.3574E+00
Z	2.1329E+00	2.7939E+00	2.9449E+00
GAME	8.7073E-01	9.0667E-01	9.4036E-01
U	2.3749E+01	2.6966E+00	2.7576E+00

SPECIES ----- MOLE FRACTIONS -----

E-	5.2059E-04	7.1600E-03	1.3465E-02
O	5.3073E-01	6.3473E-01	6.4618E-01
O+	3.0024E-05	4.3083E-04	9.8478E-04
O++	1.3079E-26	1.6378E-19	8.2619E-18
O-	2.4250E-07	1.2975E-05	2.1400E-05
O2	9.6944E-05	1.3467E-04	9.7354E-05
O2+	2.1324E-07	1.4776E-06	2.0028E-06
O2-	5.2521E-11	4.4884E-09	5.6475E-09
C	6.1422E-02	2.7029E-01	2.9494E-01
C+	4.4315E-04	6.5948E-03	1.2365E-02
C++	1.1234E-17	5.4871E-13	7.2771E-12
C-	1.7887E-08	3.8513E-06	6.9266E-06
CO	4.0667E-01	8.0252E-02	3.1618E-02
CO+	4.7464E-05	1.4978E-04	1.4201E-04
CO2	1.9080E-05	4.2498E-06	1.1842E-06
C2	2.1571E-05	2.3685E-04	1.7492E-04

P1 = 2.00E+01 N/SC-M, US1 = 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6555E+02	1.4182E+04	1.7816E+04
T	2.1058E+01	3.0257E+01	3.4557E+01
RHC	1.8472E+01	1.5863E+02	1.6400E+02
H	-1.9642E+00	-4.5848E+00	-5.2866E+00
A	6.3841E+00	9.1814E+00	1.0224E+01
S	2.1455E+00	2.4082E+00	2.4853E+00
Z	2.2255E+00	2.5548E+00	2.0949E+00
GAME	8.6765E-01	9.4290E-01	9.7393E-01
U	2.5156E+01	2.9311E+00	3.1460E+00

SPECIES ----- MOLE FRACTIONS -----

E-	9.5769E-04	1.4152E-02	3.6759E-02
O	4.5072E-01	6.4658E-01	6.2642E-01
O+	4.3258E-05	1.0382E-03	4.0433E-03
O++	1.2271E-26	9.6582E-18	4.7427E-15
O-	4.2562E-07	2.0827E-05	3.6881E-05
O2	8.0207E-05	8.5864E-05	4.5234E-05
O2+	2.1780E-07	1.9400E-06	2.9577E-06
O2-	7.6644E-11	5.0772E-09	5.1538E-09
C	1.0125E-01	2.9591E-01	2.8476E-01
C+	8.5664E-04	1.3003E-02	3.2655E-02
C++	4.5789E-17	8.2591E-12	4.6670E-10
C-	5.0545E-08	6.7613E-06	1.1598E-06
CO	3.4588E-01	2.8894E-02	5.0548E-02
CO+	5.8046E-05	1.3689E-04	1.0644E-04
CO2	1.2848E-05	9.5810E-07	8.9779E-08
C2	4.2053E-05	1.6197E-04	6.4804E-05

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

 $p_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 7.40E+03 \text{ M/SEC}$
 $p_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 7.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1511E+02	1.5189E+04	1.9225E+04
T	2.1402E+01	3.2058E+01	3.7025E+01
RMC	1.8742E+01	1.5652E+02	1.6385E+02
H	-2.1315E+00	-4.9047E+00	-5.6716E+00
A	-6.5104E+00	9.4811E+00	1.0647E+01
S	2.1772E+00	2.4482E+00	2.5266E+00
Z	2.2815E+00	3.0251E+00	3.1691E+00
GAME	8.6805E-01	9.6544E-01	9.6418E-01
U	2.5920E+01	3.1052E+00	3.3647E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6604E+02	1.6213E+04	2.0677E+04
T	2.1732E+01	3.4169E+01	3.9136E+01
RMC	1.9040E+01	1.5363E+02	1.6286E+02
H	-2.3037E+00	-5.2306E+00	-6.0633E+00
A	-6.6385E+00	1.0136E+01	1.1030E+01
S	2.2092E+00	2.4855E+00	2.5659E+00
Z	2.3348E+00	3.0886E+00	3.2442E+00
GAME	8.6865E-01	9.7758E-01	9.5825E-01
U	2.4645E+01	3.7078E+00	3.5264E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2171E-03	2.2056E-02	5.5823E-02
O	5.6059E-01	6.4562E-01	6.2116E-01
O+	5.1011E-05	1.9135E-03	7.5655E-03
O++	3.1157E-25	3.1514E-16	7.7394E-14
C-	9.3467E-07	3.126840E-05	4.4597E-05
O2	7.5051E-05	3.164029E-05	3.1571E-05
O2+	2.2456E-07	1.22990E-06	3.5132E-06
O2-	8.9952E-11	4.9808E-09	4.6733E-09
C	1.2109E-01	2.9670E-01	2.6485E-01
C+	1.1042E-03	2.0053E-02	4.8222E-02
C++	1.3327E-16	5.0699E-11	2.8301E-09
C-	7.4931E-08	8.8400E-06	1.3961E-05
CO	3.1574E-01	1.3318E-02	2.1546E-03
CO+	6.2309E-05	1.2221E-04	9.0498E-05
CO2	1.0768E-05	3.3239E-07	2.6706E-08
C2	5.2635E-05	1.0857E-04	3.7570E-05

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5088E-03	3.4695E-02	7.6592E-02
O	5.7030E-01	6.3802E-01	6.0283E-01
O+	5.6876E-05	3.6519E-03	1.2411E-02
O++	7.4907E-25	2.7596E-15	7.0749E-13
C-	6.5728E-07	3.3747E-05	4.0748E-05
O2	7.0761E-05	4.5216E-05	2.3488E-05
O2+	2.3328E-07	2.7377E-06	4.0392E-06
O2-	1.0413E-10	4.6401E-09	4.2397E-09
C	1.4050E-01	2.8677E-01	2.4274E-01
C+	1.3834E-03	3.0969E-02	6.4165E-02
C++	2.5744E-16	3.2710E-10	1.1600E-08
C-	1.0557E-07	1.1003E-05	1.5106E-05
CO	2.8604E-01	5.6467E-03	1.0630E-03
CO+	4.6066E-05	1.0573E-04	7.8094E-05
CO2	9.0265E-06	5.8611E-08	9.9912E-09
C2	6.2775E-05	6.5468E-05	2.3200E-05

 $p_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 7.80E+03 \text{ M/SEC}$
 $p_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 8.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0183E+03	1.7268E+04	2.2163E+04
T	2.2057E+01	3.6253E+01	4.1021E+01
RMC	1.9320E+01	1.5114E+02	1.6264E+02
H	-2.4798E+00	-5.6450E+00	-6.4611E+00
A	6.7703E+00	1.0514E+01	1.1293E+01
S	2.7418E+00	2.5234E+00	2.6038E+00
Z	2.7866E+00	3.1516E+00	3.3220E+00
GAME	8.6944E-01	9.6754E-01	9.5260E-01
U	2.7266E+01	3.0025E+00	3.4844E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0715E+03	1.8361E+04	2.3689E+04
T	2.2381E+01	3.8167E+01	4.2745E+01
RMC	1.9582E+01	1.5554E+02	1.6288E+02
H	-2.6408E+00	-5.0839E+00	-6.8681E+00
A	6.9051E+00	1.0657E+01	1.1746E+01
S	2.2748E+00	2.5591E+00	2.6408E+00
Z	2.4456E+00	3.2172E+00	3.4024E+00
GAME	8.7100E-01	9.6000E-01	9.4867E-01
U	2.8090E+01	3.6830E+00	3.8382E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.8396E-03	5.0974E-02	9.7745E-02
O	5.7980E-01	6.2537E-01	5.8282E-01
O+	7.0234E-05	6.4651E-03	1.8466E-02
O++	1.8477E-24	3.5309E-14	4.2144E-12
C-	7.9573E-07	4.0231E-05	5.5792E-05
O2	4.6562E-05	3.2471E-05	1.8334E-05
O2+	2.4328E-07	2.1974E-06	4.5159E-06
O2-	1.1515E-10	4.2387E-09	3.8581E-09
C	1.5950E-01	2.6594E-01	2.2091E-01
C+	1.7007E-03	4.4444E-02	7.9279E-02
C++	4.9092E-16	1.7527E-09	2.5729E-08
C-	1.4229E-07	1.2714E-05	1.5592E-05
CO	2.5687E-01	2.4756E-02	5.8894E-02
CO+	6.5362E-05	5.1035E-05	6.8198E-05
CO2	7.5275E-06	3.2752E-08	4.4154E-09
C2	7.2148E-05	4.0692E-05	1.5058E-05

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2144E-03	6.9135E-02	1.1885E-01
O	5.8000E-01	6.0974E-01	5.6162E-01
O+	8.2403E-05	1.0395E-02	2.5688E-02
O++	4.1914E-24	2.8775E-13	1.8831E-11
C-	9.5118E-07	4.5645E-05	5.8766E-05
O2	6.3512E-05	2.4499E-05	1.4749E-05
O2+	2.5577E-07	3.6317E-06	4.9436E-06
O2-	1.3494E-10	3.8642E-09	3.5044E-09
C	1.7802E-01	2.5050E-01	2.0016E-01
C+	2.0617E-03	5.8716E-02	9.3170E-02
C++	8.5369E-16	6.7218E-09	9.0771E-08
C-	1.8902E-07	1.3822E-05	1.5600E-05
CO	2.2834E-01	1.3246E-03	3.5245E-04
CO+	7.2186E-05	7.9390E-05	5.9931E-05
CO2	6.2422E-06	1.2911E-08	2.1759E-09
C2	8.0455E-05	2.6024E-05	1.0177E-05

TABLE I.- Continued

$$p_1 = 20, N/m^2$$

P1 = 2.00E+C1 N/SQ-M, US1= 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1270E+03	1.9490E+04	2.5247E+C4
T	2.2711E+01	3.5903E+01	4.4345E+01
RHC	-1.9822E+01	1.4863E+02	1.6337E+02
M	-2.8464E+00	-6.2612E+00	-7.2834E+00
A	7.0443E+00	1.1186E+01	1.2090E+01
S	2.3080E+00	2.5940E+00	2.6772E+00
Z	2.5035E+00	3.2863E+00	3.4849E+00
GAME	8.7274E-01	9.5411E-01	9.4591E-01
U	2.8814E+01	2.8479E+00	3.978E+C0

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.6455E-03	8.8117E-02	1.3957E-01
O	5.98C2E-01	5.9233E-01	5.3955E-C1
O+	9.7095E-05	1.5341E-02	3.2988E-02
O++	9.9926E-24	1.6410E-12	6.8061E-11
O-	1.1212E-06	4.9938E-05	6.1044E-05
O2	6.0152E-C5	1.9257E-05	1.2106E-05
O2+	2.6947E-07	4.0423E-06	5.3157E-06
O2-	1.5140E-10	3.5272E-09	3.1798E-09
C	1.9598E-01	2.3052E-01	1.8093E-01
C+	2.4789E-02	7.2767E-02	1.0560E-01
C++	1.6436E-15	2.0252E-08	2.0026E-07
C-	2.4390E-07	1.4396E-05	1.5271E-C5
CO	2.0055E-01	7.4832E-04	2.2309E-04
CO+	7.4511E-C5	6.5881E-05	5.2853E-05
CO2	5.1059E-06	5.8429E-09	1.1590E-09
C2	8.7336E-05	1.7329E-05	7.0432E-06

P1 = 2.00E+C1 N/SQ-M, US1= 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2407E+03	2.1786E+04	2.8383E+C4
T	2.3413E+01	4.2576E+01	4.7258E+01
RHC	2.0206E+01	1.4773E+02	1.6437E+02
M	-3.2312E+00	-6.9906E+00	-8.1364E+00
A	7.3410E+00	1.1816E+01	1.2758E+01
S	2.3758E+00	2.6620E+00	2.7486E+00
Z	2.6226E+00	3.4716E+00	3.6539E+00
GAME	8.7767E-01	9.4677E-01	9.4257E-01
U	3.0247E+01	4.1430E+00	4.2391E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.7640E-03	1.2627E-01	1.7924E-01
O	6.1501E-01	5.5426E-01	4.9376E-C1
O+	1.3787E-04	2.8121E-02	5.3362E-02
O++	7.763E-23	2.5336E-11	5.6175E-10
O-	1.5483E-06	5.5466E-05	6.2824E-05
O2	5.3248E-05	1.2861E-05	8.4456E-06
O2+	3.0223E-07	4.7466E-06	5.8654E-06
O2-	1.8546E-10	2.9323E-09	2.5858E-09
C	2.3005E-01	1.9275E-01	1.4749E-01
C+	3.5501E-03	9.8157E-02	1.2591E-01
C++	5.6012E-15	1.1168E-07	7.2343E-C7
C-	3.8755E-07	1.4371E-05	1.4000E-05
CO	1.4726E-01	2.9110E-04	1.0051E-04
CO+	7.7726E-05	5.5020E-05	4.1251E-05
CO2	3.2189E-06	1.5844E-09	3.8546E-10
C2	9.5568E-05	8.3893E-06	3.5739E-06

P1 = 2.00E+C1 N/SQ-M, US1= 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1831E+03	2.0627E+04	2.6806E+04
T	2.3053E+01	4.1493E+01	4.5879E+01
RHC	2.0028E+01	1.4805E+02	1.6387E+02
M	-3.0365E+00	-6.4212E+00	-7.7051E+C0
A	7.1892E+00	1.1504E+01	1.2426E+01
S	2.3418E+00	2.6282E+00	2.7130E+00
Z	2.5626E+00	3.2577E+00	3.5688E+00
GAME	8.7493E-01	9.4986E-01	9.4255E-C1
U	2.9530E+01	4.0066E+00	4.1114E+C0

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.1591E-03	1.0722E-01	1.5967E-01
O	6.0670E-01	5.7378E-01	5.1693E-01
O+	1.1520E-04	2.1251E-02	4.3228E-02
O++	2.4191E-23	7.1078E-12	2.0781E-10
O-	1.3211E-C6	5.3156E-C5	6.2343E-05
O2	5.6755E-C5	1.5587E-05	1.0073E-05
O2+	2.8487E-C7	4.4140E-C6	5.6232E-06
O2-	1.6831E-10	3.2185E-09	2.8745E-09
C	2.1337E-C1	2.1114E-01	1.4341E-01
C+	2.9688E-02	8.5974E-02	1.1647E-01
C++	3.0372E-15	5.0747E-08	3.9606E-07
C-	2.0952E-C7	1.4541E-05	1.4710E-05
CO	1.7346E-01	4.5467E-04	1.4750E-04
CO+	7.6414E-C5	6.1908E-05	4.6696E-05
CO2	4.1905E-06	2.9353E-09	6.5522E-10
C2	9.2484E-C5	1.1922E-05	4.9802E-06

P1 = 2.00E+C1 N/SQ-M, US1= 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2995E+03	2.2545E+04	2.9945E+04
T	2.3801E+01	4.4367E+01	4.8605E+01
RHC	2.0345E+01	1.4745E+02	1.6474E+C2
M	-3.4304E+00	-7.3682E+00	-8.5732E+00
A	7.5023E+00	1.2123E+01	1.3083E+01
S	2.4101E+00	2.6556E+00	2.7837E+00
Z	2.6836E+00	3.5073E+00	3.7399E+00
GAME	8.8120E-01	9.4450E-01	9.4164E-C1
U	3.0962E+01	4.2782E+00	4.3515E+C0

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.5059E-C3	1.4503E-01	1.9808E-01
O	6.2290E-01	5.3403E-01	4.7040E-01
O+	1.6744E-04	3.5804E-02	6.4177E-02
O++	1.4848E-22	7.7322E-11	1.3671E-09
O-	1.8121E-06	5.6946E-05	6.2473E-C5
O2	4.9495E-05	1.0752E-05	7.1198E-06
O2+	3.2190E-07	5.0327E-06	6.0355E-06
O2-	2.0243E-10	2.6627E-09	2.3133E-09
C	2.4591E-C1	1.7557E-01	1.3321E-01
C+	4.2620E-C3	1.0916E-01	1.3394E-01
C++	1.0758E-14	2.2184E-07	1.2348E-06
C-	4.8074E-C7	1.3967E-05	1.3022E-C5
CO	1.2202E-01	1.9375E-04	7.0292E-04
CO+	7.8400E-C5	4.8967E-05	3.6438E-05
CO2	2.4444E-C6	9.0314E-10	2.2437E-10
C2	5.6231E-05	6.0089E-06	2.6010E-C6

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3555F+03	2.4C8RE+04	3.1489E+C4
T	2.4232F+01	4.5694E+01	4.9905E+01
RHO	2.0427E+01	1.4709E+02	1.6485E+02
H	-3.5342E+C0	-7.7538E+00	-9.0215E+C0
A	7.6767F+00	1.2425F+01	1.34C8E+C1
S	2.4446E+C0	2.7290E+00	2.8190F+00
Z	2.7452E+00	3.5844E+00	3.8277F+C0
GAME	8.8590E-01	9.4281E-01	9.41C9F-C1
U	-3.1673F+C1	4.4070F+00	4.4723F+C0

SPECIES	MOLE FRACTIONS	
E-	5.4478E-C3	1.6340E-01
O	6.3028E-C1	5.1221E-01
O+	2.0774E-C4	4.4470E-02
O++	4.3510E-22	2.0881E-10
C-	2.1291E-C6	5.7679E-05
C2	4.5355E-05	9.0672E-06
O2+	3.4449E-07	5.2666E-06
O2-	2.1866E-10	2.4001E-09
C	2.6079E-C1	1.5970E-01
C+	5.1641E-02	1.1855F-01
C++	2.2C59F-14	4.0666E-07
C-	5.9285E-C7	1.3397F-05
CO	9.7852E-02	1.3291E-04
CO+	7.83C5F-05	4.3F84E-05
CO2	1.7746E-06	5.3602E-10
C2	9.4051F-05	4.3629F-06

P1 = 2.00E+01 N/SC-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4207E+03	2.5191E+04	3.2975E+C4
T	2.4725E+01	4.6934E+01	5.1155E+C1
RHO	2.0470E+01	1.4652E+02	1.6459F+02
H	-3.8424E+00	-8.1470E+00	-9.4776E+C0
A	7.8697F+00	1.2723E+01	1.3729E+C1
S	2.4792E+00	2.7623E+00	2.8543E+C0
Z	2.807CE+00	3.6632E+00	3.9164E+00
GAME	8.9236E-01	9.4156E-01	9.4086F-C1
U	3.2379E+01	4.5304E+00	4.5896E+C0

SPECIES	MOLE FRACTIONS	
E-	6.6912E-03	1.8132E-01
O	6.3659F-01	4.9196F-01
O+	2.6526E-04	5.3794E-02
O++	1.3960E-21	5.0955E-10
O-	2.5014E-06	5.7727E-05
C2+	4.0836E-05	7.6804E-06
O2+	3.7055E-07	5.4428E-06
O2-	2.3327E-10	2.1605E-09
C	2.7440E-01	1.4516E-01
C+	6.3516E-03	1.2755E-01
C++	4.8363E-14	6.9849E-07
C-	7.2921E-07	1.2710E-05
CO	7.5093E-02	9.3362E-05
CO+	7.7261E-05	3.8754E-05
CO2	1.2099E-06	3.2808E-10
C2	8.8746E-05	3.2022E-06

P1 = 2.00E+01 N/SC-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4829E+03	2.6220E+C4	3.4357E+C4
T	2.5313E+01	4.8124F+01	5.2358E+01
RHO	2.0424E+C1	1.4555F+02	1.6380E+02
H	-4.0552E+00	-8.5472E+00	-9.94C8F+00
A	8.0910F+00	1.3017E+01	1.4049E+C1
S	2.5139E+00	2.7558F+00	2.8857E+C0
Z	2.8683E+00	3.7431E+00	4.0061E+C0
GAME	9.0168F-01	9.4067F-01	9.4093E-01
U	3.308CE+01	4.6485F+00	4.7035F+00

SPECIES	MOLE FRACTIONS	
E-	8.4314E-03	1.5876E-01
O	6.4277F-01	4.7038E-01
O+	3.5343E-C4	6.3756E-02
O++	5.2537F-21	1.1433E-09
C-	2.9624F-C6	5.7123E-05
C2	3.4701E-05	6.6192E-06
O2+	4.0786F-C7	5.4554F-06
O2-	2.4451E-10	1.9240E-09
C	2.8623E-C1	1.3190E-01
C+	8.0065F-02	1.3502E-01
C++	1.1827E-13	1.1349F-06
C-	8.9823E-07	1.1943F-05
CO	5.4016F-02	6.6782E-05
CO+	7.4952F-05	3.4395F-05
CO2	7.5256E-C7	2.0523F-10
C2	7.98C3E-05	2.3692F-06

P1 = 2.00E+01 N/SC-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5460E+03	2.7120E+C4	3.6563F+C4
T	2.6047F+01	4.9246F+01	5.3F10E+01
RHO	2.0272E+01	1.4404F+02	1.6222F+C2
H	-4.2724E+00	-8.9533E+C0	-1.0410F+C1
A	8.3556F+00	1.3304F+01	1.4264F+C1
S	2.5483E+00	2.8293F+00	2.9254F+C0
Z	2.9279E+C0	3.8235F+00	4.0066F+00
GAME	9.1545F-01	9.40C7F-01	9.4127F-C1
U	3.3770E+C1	4.7623F+00	4.8138F+C0

SPECIES	MOLE FRACTIONS	
E-	1.1061E-02	2.1558E-01
O	6.4708E-C1	4.4875F-01
O+	5.0235F-04	7.4174E-02
O++	2.6750E-20	2.3713E-09
O-	3.4449E-06	5.5355E-05
C2	2.9514E-05	5.5358E-C6
O2+	4.4259E-07	5.9888E-06
O2-	2.5143F-10	1.4568E-09
C	2.9522F-01	1.1990E-01
C+	1.0492F-02	1.4143E-01
C++	3.4855E-13	1.7624E-06
C-	1.1127E-06	1.1244F-05
CO	3.5377F-C2	4.8557E-05
CO+	7.1118E-05	3.0464F-05
CO2	4.0569E-07	1.7082E-10
C2	6.7109F-05	1.7664E-06

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6099E+02	2.7820E+04	3.6506E+04
T	2.6999E+01	5.0317E+01	5.4000E+01
RHO	1.9981E+01	1.4161E+02	1.5964E+02
M	-4.4940E+00	-0.7642E+00	-1.0883E+01
A	8.6752E+00	1.3590E+01	1.4676E+01
S	2.5824E+00	2.8936E+00	2.9615E+00
Z	2.9841E+00	3.9058E+00	4.1877E+00
GAME	9.3410E-01	9.7970E-01	9.4184E-01
U	3.4448E+01	4.8681E+00	4.9198E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5323E-02	2.2210E-01	2.8377E-01
O	6.4896E-01	4.2679E-01	3.5211E-01
O+	7.7902E-04	6.5174E-02	1.2537E-01
O++	1.9562E-19	4.6434E-09	4.2284E-08
O-	4.3384E-06	5.4102E-05	5.2430E-05
O2	2.3623E-05	4.6743E-06	2.9537E-06
O2+	4.9528E-07	5.5671E-06	5.7550E-06
O2-	2.5004E-10	1.4730E-09	1.1348E-09
C	2.9955E-01	1.0885E-01	8.0219E-02
C+	1.4483E-02	1.4699E-01	1.5842E-01
C++	1.3041E-12	2.4381E-06	9.6155E-06
C-	1.3873E-06	1.0250E-05	8.7486E-06
CO	2.0350E-02	3.5529E-05	1.4271E-05
CO+	6.5311E-05	2.6832E-05	1.8747E-05
CO2	1.8533E-07	8.3689E-11	2.4058E-11
C2	5.1420E-05	1.2159E-06	5.8170E-07

P1 = 2.00E+01 N/SC-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8400E+02	2.9446E+04	3.8628E+04
T	2.1459E+01	5.3723E+01	5.8221E+01
RHO	1.8495E+01	1.3054E+02	1.4705E+02
M	-5.3042E+00	-1.0847E+01	-1.2784E+01
A	9.7059E+00	1.4567E+01	1.5762E+01
S	2.6552E+00	2.9848E+00	3.0857E+00
Z	3.1584E+00	4.1588E+00	4.5119E+00
GAME	9.4491E-01	9.4024E-01	9.4578E-01
U	3.6761E+01	5.2149E+00	5.2755E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.2174E-02	2.8566E-01	3.3521E-01
C	4.2672E-01	3.5085E-01	2.7740E-01
C+	4.6253E-02	1.2538E-01	1.6581E-01
O+	5.8022E-19	3.3419E-08	2.4577E-07
O-	8.0655E-06	4.5121E-05	2.9986E-06
O2	8.3375E-06	2.5202E-06	1.4557E-06
O2+	7.6132E-07	5.0304E-06	4.6540E-06
O2-	1.9490E-10	8.7478E-10	5.6635E-10
C	2.6704E-01	7.7722E-02	5.6123E-02
C+	4.7514E-02	1.6029E-01	1.6537E-01
C++	2.3820E-10	8.6306E-06	2.7944E-06
C-	2.4587E-06	7.7479E-06	5.8965E-06
CO	1.8135E-02	1.2680E-05	4.9884E-06
CO+	4.0881E-05	1.4877E-05	1.1020E-05
CO2	5.9825E-09	1.8651E-11	5.0071E-12
C2	1.2211E-05	4.8432E-07	2.0712E-07

P1 = 2.00E+01 N/SC-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6743E+03	2.8328E+04	3.7162E+04
T	2.8201E+01	5.1335E+01	5.5650E+01
RHO	1.9556E+01	1.3831E+02	1.5605E+02
M	-4.7159E+00	-9.7790E+00	-1.1359E+01
A	9.0221E+00	1.3872E+01	1.4583E+01
S	2.6157E+00	2.8588E+00	2.9981E+00
Z	3.0358E+00	3.9897E+00	4.2794E+00
GAME	9.5078E-01	9.3955E-01	9.4262E-01
U	3.5111E+01	4.5690E+00	5.0215E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2257E-02	2.4824E-01	2.9910E-01
O	6.4714E-01	4.0466E-01	3.2920E-01
O+	1.3153E-07	9.6506E-02	1.7807E-01
O++	7.1072E-18	8.6185E-09	7.2050E-08
O-	5.3423E-06	5.1722E-05	4.8570E-05
O2	1.7583E-05	3.9226E-06	2.4329E-06
O2+	5.6250E-07	5.4624E-06	5.4800E-06
O2-	2.3519E-10	1.2588E-09	9.4344E-10
C	2.9754E-01	8.8710E-02	7.2491E-02
C+	2.0921E-02	1.5176E-01	1.6104E-01
C++	6.1842E-12	9.8258E-06	1.3257E-06
C-	1.7191E-06	9.3488E-06	7.8495E-06
CO	1.0255E-02	2.6137E-05	1.0559E-05
CO+	5.7851E-05	2.3502E-05	1.6190E-05
CO2	6.9452E-08	5.3678E-11	1.5347E-11
C2	2.5537E-05	9.7967E-07	4.3299E-07

P1 = 2.00E+01 N/SC-M, US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0156E+03	3.1214E+04	4.1001E+04
T	3.4216E+01	5.6176E+01	6.1013E+01
RHO	1.7904E+01	1.2584E+02	1.4143E+02
M	-5.9176E+00	-1.1577E+01	-1.3895E+01
A	1.0258E+01	1.5291E+01	1.6606E+01
S	2.7701E+00	3.0697E+00	3.1803E+00
Z	2.2904E+00	4.4155E+00	4.7517E+00
GAME	9.3477E-01	9.4262E-01	9.5120E-01
U	2.8429E+01	5.4756E+00	5.5659E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.8929E-02	3.2049E-01	3.6875E-01
O	5.9678E-01	2.9745E-01	2.1941E-01
O+	1.1000E-02	1.5344E-01	2.0144E-01
O++	2.7480E-14	1.1545E-07	8.0027E-07
O-	9.9528E-06	3.8461E-05	3.1456E-05
O2	4.8701E-06	1.6061E-06	8.2957E-07
O2+	9.4472E-07	4.4663E-06	3.7602E-06
O2-	1.5850E-10	5.4369E-10	3.2271E-10
C	2.2532E-01	6.1087E-02	4.3073E-02
C+	7.7909E-02	1.6525E-01	1.6722E-01
C++	2.7655E-09	1.8163E-05	5.7791E-05
C-	2.7347E-06	5.7417E-06	4.3455E-06
CO	5.0657E-04	6.2744E-06	2.3121E-06
CO+	3.0456E-05	1.1924E-05	7.2859E-06
CO2	1.0196E-09	6.5987E-12	1.5578E-12
C2	5.0516E-06	2.4448E-07	5.8149E-08

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2002E+03	3.3399E+04	4.3967E+04
T	3.6492E+01	5.8729E+01	6.4097E+01
RHO	1.7564E+01	1.2262E+02	1.3733E+02
M	-6.5598E+00	-1.3165E+01	-1.5282E+01
A	1.0787E+01	1.6058E+01	1.7526E+01
S	2.8430E+00	3.1541E+00	3.2699E+00
Z	3.4230E+00	4.6378E+00	4.9948E+00
GAME	9.2882E-01	9.4674E-01	9.5945E-01
U	4.0130E+01	5.7587E+00	5.9845E+00

SPECIES	MOLE FRACTIONS		
E-	1.2649E-01	3.5326E-01	3.9548E-01
O	5.6171E-01	2.4564E-01	1.6857E-01
O+	2.0631E-02	1.8554E-01	2.3180E-01
O++	4.6096E-13	3.6707E-07	2.5625E-06
-	1.1114E-05	3.1490E-05	2.3363E-05
O2	3.2116E-06	9.8233E-07	4.3514E-07
O2+	1.1053E-06	3.7878E-06	2.8378E-06
O2-	1.2964E-10	2.3828E-10	1.6712E-10
C	1.8510E-01	4.7799E-02	3.2546E-02
C+	1.0584E-01	1.6767E-01	1.6744E-01
C++	1.5922E-08	3.6628E-05	1.2035E-04
C-	2.6836E-06	4.4152E-06	3.0949E-06
CO	1.8645E-04	3.0933E-06	1.0168E-06
CO+	2.3292E-04	8.2596E-06	4.5859E-06
CO2	7.6051E-10	2.3020E-12	4.4204E-13
C2	2.3262E-06	1.2343E-07	4.4636E-08

P1 = 2.00E+01 N/SC-M, US1 = 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5963E+03	3.8511E+04	5.1119E+04
T	4.0352E+01	6.4359E+01	7.2044E+01
RHO	1.7216E+01	1.1766E+02	1.2962E+02
M	-7.9305E+00	-1.5708E+01	-1.8312E+01
A	1.1803E+01	1.7742E+01	1.9765E+01
S	2.9856E+00	3.3192E+00	3.4475E+00
Z	3.7372E+00	5.0558E+00	5.4742E+00
GAME	9.2382E-01	9.6166E-01	9.9051E-01
U	4.3566E+01	6.3837E+00	6.6692E+00

SPECIES	MOLE FRACTIONS		
E-	1.9744E-01	4.1021E-01	4.5206E-01
O	4.8487E-01	1.5131E-01	7.9905E-02
O+	5.0212E-02	2.4191E-01	2.8540E-01
O++	2.6960E-11	3.2680E-06	3.1555E-05
-	1.1657E-05	1.6579E-05	9.4194E-06
O2	1.6159E-06	3.0240E-07	7.3499E-08
O2+	1.3367E-06	2.2857E-08	1.1491E-06
O2-	8.5244E-11	1.0307E-10	2.5306E-11
C	1.2018E-01	2.8375E-02	1.6627E-02
C+	1.4723E-01	1.6802E-01	1.6532E-01
C++	1.8374E-07	1.4418E-04	6.3968E-04
C-	2.1425E-06	2.3846E-06	1.2342E-06
CO	3.7491E-05	6.7761E-07	1.3134E-07
CO+	1.4078E-05	3.5425E-06	1.3563E-06
CO2	2.9094E-11	2.2701E-13	1.7579E-14
C2	5.8274E-07	2.8987E-08	6.4806E-09

P1 = 2.00E+01 N/SC-M, US1 = 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3940E+03	3.5863E+04	4.7362E+04
T	3.8506E+01	6.1413E+01	6.7661E+01
RHO	1.7354E+01	1.2013E+02	1.3363E+02
M	-7.2308E+00	-1.4410E+01	-1.6751E+01
A	1.1301E+01	1.6866E+01	1.8599E+01
S	2.9146E+00	3.2348E+00	3.3590E+00
Z	3.5826E+00	4.8612E+00	5.2381E+00
GAME	9.2565E-01	9.5285E-01	9.7183E-01
U	4.1844E+01	6.0536E+00	6.2434E+00

SPECIES	MOLE FRACTIONS		
E-	1.6286E-01	3.8297E-01	4.2736E-01
O	5.2442E-01	1.5692E-01	1.2164E-01
O+	3.3707E-02	2.1446E-01	2.6014E-01
O++	4.2622E-12	1.0994E-06	8.5166E-06
-	1.1622E-05	2.5027E-05	1.5882E-05
O2	2.2488E-06	5.6992E-07	1.9928E-07
O2+	1.2288E-06	3.0476E-06	1.9420E-06
O2-	1.0565E-10	1.9709E-10	7.3821E-11
C	1.4975E-01	3.7158E-02	2.3868E-02
C+	1.2914E-01	1.6838E-01	1.6699E-01
C++	6.1373E-08	7.2166E-05	2.6219E-04
C-	2.4483E-06	3.2199E-06	2.0633E-06
CO	7.9859E-05	1.4939E-06	4.0146E-07
CO+	1.8144E-05	5.5535E-06	2.6656E-06
CO2	8.2906E-11	7.6654E-13	1.0357E-13
C2	1.1408E-06	6.1439E-08	1.8498E-08

P1 = 2.00E+01 N/SC-M, US1 = 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.8071E+03	4.1291E+04	5.5239E+04
T	4.2081E+01	6.7724E+01	7.7830E+01
RHO	1.7123E+01	1.1489E+02	1.2475E+02
M	-8.6585E+00	-1.7059E+01	-1.9983E+01
A	1.2300E+01	1.8713E+01	2.1201E+01
S	3.0562E+00	3.4007E+00	3.5351E+00
Z	3.8955E+00	5.3066E+00	5.6895E+00
GAME	9.2278E-01	9.7438E-01	1.0150E+00
U	4.5254E+01	6.7620E+00	7.2037E+00

SPECIES	MOLE FRACTIONS		
E-	2.3010E-01	4.3476E-01	4.7279E-01
O	4.4356E-01	1.0972E-01	4.5722E-02
O+	6.9761E-02	2.6714E-01	3.0566E-01
O++	1.3032E-10	1.0063E-05	1.4219E-04
-	1.1339E-05	1.2662E-05	4.5482E-06
O2	1.1758E-06	1.4085E-07	1.9489E-08
O2+	1.3907E-06	1.5618E-06	5.4817E-07
O2-	6.7824E-11	4.6138E-11	5.8934E-12
C	9.6157E-02	2.1052E-02	1.0685E-02
C+	1.6034E-01	1.6700E-01	1.6214E-01
C++	4.4163E-07	3.0194E-04	1.8529E-03
C-	1.8259E-06	1.5075E-06	6.2180E-07
CO	1.8729E-05	2.7675E-07	2.1855E-08
CO+	1.0886E-05	2.0900E-06	5.9917E-07
CO2	1.1775E-11	5.5908E-14	1.7969E-15
C2	7.0769E-07	1.2474E-08	1.7241E-09

TABLE I: - Continued

$$p_1 = 20 \text{ N/m}^2$$

 $P_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 1.35E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0264E+03	4.4165E+04	5.9680E+04
T	4.3724E+01	7.1745E+01	8.5225E+01
RHO	1.7056E+01	1.1163E+02	1.1942E+02
M	-9.4155E+00	-1.8459E+01	-2.1759E+01
A	1.2794E+01	1.9816E+01	2.2601E+01
S	3.1266E+00	3.4801E+00	3.6193E+00
Z	4.0581E+00	5.5148E+00	5.8639E+00
GAME	9.2247E-01	9.5250E-01	1.0221E+00
U	4.7024E+01	7.1946E+00	7.8267E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.6087E-01	4.5609E-01	4.8847E-01
C	4.0113E-01	7.3553E-02	2.3379E-02
O+	9.1675E-02	2.8907E-01	3.1667E-01
O++	5.1377E-10	3.3608E-05	7.2253E-04
O-	1.0754E-04	7.6749E-06	1.8276E-06
O2	8.5921E-07	5.4645E-08	3.8867E-09
O2+	1.3949E-06	9.4230E-07	2.1492E-07
O2-	5.3021E-11	1.6625E-11	9.7727E-13
O2+	7.7052E-02	1.4575E-02	6.4186E-03
C+EO	1.6920E-01	1.6559E-01	1.5802E-01
C+SO	1.0209E-06	6.8763E-04	4.0185E-03
C+	1.5411E-06	5.8776E-07	2.6596E-07
CO	9.7823E-06	9.6642E-08	5.9754E-09
CO+	8.3758E-06	1.1035E-06	-1.9149E-07
CO2	4.8815E-12	1.0503E-14	1.1912E-16
C2	1.6721E-07	4.6668E-09	3.5532E-10

 $P_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 1.45E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4899E+03	4.5956E+04	6.8930E+04
T	4.6862E+01	8.3108E+01	9.8887E+01
RHO	1.6953E+01	1.0270E+02	1.1325E+02
M	-1.1016E+01	-2.1400E+01	-2.5445E+01
A	1.3792E+01	2.2316E+01	2.4320E+01
S	3.2675E+00	3.6322E+00	3.7737E+00
Z	4.3927E+00	5.8527E+00	6.1552E+00
GAME	9.2420E-01	1.0238E+00	9.7174E-01
U	5.0488E+01	8.3335E+00	8.8798E+00

SPECIES ----- MOLE FRACTIONS -----

E-	3.1716E-01	4.8749E-01	5.1268E-01
O	3.1579E-01	2.4319E-02	8.3797E-03
O+	1.3949E-01	3.1685E-01	3.0941E-01
O++	5.2026E-09	5.4730E-04	7.1333E-02
O-	9.0321E-06	1.7522E-06	4.3514E-07
O2	4.4149E-07	3.8826E-09	3.1270E-10
O2+	1.2463E-06	2.0770E-07	4.6731E-08
O2-	3.0250E-11	8.8471E-13	5.9106E-14
C	4.9866E-02	6.3262E-03	2.7464E-03
C+	1.7767E-01	1.5937E-01	1.3029E-01
C++	3.8788E-06	5.0870E-03	2.9352E-02
C-	1.0644E-06	2.4853E-07	6.3814E-08
CO	2.8930E-06	6.0031E-09	4.1748E-10
CO+	4.8514E-06	1.9042E-07	3.1198E-08
CO2	9.0822E-12	1.1790E-16	1.6709E-18
C2	5.2822E-08	3.4576E-10	2.5188E-11

 $P_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2540E+03	4.7062E+04	6.4299E+04
T	4.5310E+01	7.6804E+01	9.2767E+01
RHO	1.7003E+01	1.0750E+02	1.1531E+02
M	-1.0202E+01	-1.9507E+01	-2.3596E+01
A	1.3290E+01	2.1077E+01	2.3555E+01
S	3.1970E+00	3.5573E+00	3.6996E+00
Z	4.2238E+00	5.7000E+00	6.0112E+00
GAME	9.2293E-01	1.0148E+00	9.9497E-01
U	4.8756E+01	7.7221E+00	8.4237E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.8986E-01	4.7277E-01	5.0100E-01
O	3.5822E-01	4.4347E-02	1.2800E-02
O+	1.1516E-01	3.0839E-01	3.1707E-01
O++	1.7334E-09	1.2869E-04	2.8419E-02
O-	9.9679E-06	3.9615E-06	7.8824E-07
O2	6.2067E-07	1.6420E-08	8.9214E-10
O2+	1.3518E-06	4.7891E-07	8.9132E-08
O2-	4.0587E-11	4.4263E-12	1.8882E-13
C	6.1940E-02	1.0019E-02	3.9888E-03
C+	1.7469E-01	1.6356E-01	1.4634E-01
C++	2.0572E-06	1.7797E-03	1.5955E-02
C-	1.2860E-06	5.3065E-07	1.1813E-07
CO	5.2717E-06	2.6847E-08	1.2887E-09
CO+	6.4027E-06	4.9665E-07	6.8731E-08
CO2	2.0845E-12	1.3369E-15	1.0015E-17
C2	9.3215E-08	1.4139E-09	7.9664E-11

 $P_1 = 2.00E+01 \text{ N/SC-M}, \quad US1 = 1.50E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.7239E+03	5.2918E+04	7.5581E+04
T	4.8410E+01	8.9527E+01	1.0355E+02
RHO	1.6897E+01	9.8899E+01	1.1227E+02
M	-1.1858E+01	-2.2943E+01	-2.7323E+01
A	1.4207E+01	2.2169E+01	2.5070E+01
S	3.3781E+00	3.7015E+00	3.8449E+00
Z	4.5646E+00	5.9767E+00	6.3053E+00
GAME	9.2630E-01	1.0032E+00	9.5896E-01
U	5.2210E+01	8.9330E+00	9.2516E+00

SPECIES ----- MOLE FRACTIONS -----

E-	3.4288E-01	4.5813E-01	5.2428E-01
O	2.7409E-01	1.4034E-02	6.1215E-03
O+	1.6404E-01	3.1869E-01	2.9749E-01
O++	1.4343E-09	1.9106E-03	1.3586E-02
O-	7.9924E-06	8.1617E-07	2.8108E-07
O2	3.0688E-07	1.0209E-09	1.4289E-10
O2+	1.1466E-06	9.3732E-08	2.8385E-08
O2-	2.1811E-11	1.9800E-13	2.1515E-14
C	4.0143E-02	4.1191E-03	2.0113E-03
C+	1.7882E-01	1.5062E-01	1.1341E-01
C++	6.9920E-06	1.2499E-02	4.3104E-02
C-	8.7272E-07	1.2001E-07	3.9173E-08
CO	1.5966E-06	1.5000E-09	1.7438E-10
CO+	3.6310E-06	7.6156E-08	1.6432E-08
CO2	3.9375E-13	1.2508E-17	4.2807E-19
C2	2.0163E-08	9.0799E-11	9.9327E-12

TABLE I.- Continued

$$p_1 = 20 \text{ N/m}^2$$

P1 = 2.00E+01 N/SC-M, US1 = 1.55E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9858E+03	5.6026E+04	7.8221E+04
T	4.9583E+C1	9.5231E+01	1.0834E+02
RHO	1.6827E+01	9.6428E+01	1.1176E+02
M	-1.2729E+01	-2.4544E+01	-2.9235E+01
A	1.4877E+01	2.3844E+01	2.5812E+C1
S	3.4887E+00	3.7691E+00	3.9143E+00
Z	4.7351E+00	6.1011E+00	6.4602E+00
GAME	9.2935E-C1	9.7855E-01	9.5192E-C1
U	5.3945E+01	9.4271E+00	9.5557E+00

SPECIES	MOLE FRACTIONS		
E-	3.6706E-C1	5.0836E-01	5.2569E-01
O	2.3366E-01	9.1178E-03	4.7448E-03
O+	1.8835E-01	3.1379E-01	2.8282E-01
O++	2.7329E-08	4.9029E-03	2.2008E-02
O-	6.8829E-06	4.4603E-07	1.9799E-07
O2	2.0659E-07	3.5352E-10	7.5535E-11
O2+	1.0018E-06	4.9079E-08	1.8644E-08
O2-	1.5078E-11	6.0753E-14	1.2644E-14
C	3.2215E-C2	2.8573E-03	1.5245E-03
C+	1.7869E-01	1.3719E-01	9.7560E-02
C++	1.2275E-05	2.3787E-02	5.5640E-02
C-	7.0539E-07	6.5235E-08	2.5884E-08
CO	8.7434E-07	4.8631E-10	8.4012E-11
CO+	2.6710E-06	3.5102E-08	9.4224E-05
CO2	1.6701E-13	2.0655E-18	1.3942E-15
C2	1.7168E-08	2.9333E-11	4.4535E-12

P1 = 2.00E+01 N/SC-M, US1 = 1.60E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2456E+03	5.9245E+04	8.2854E+C4
T	5.1616E+01	1.0001E+02	1.1235E+C2
RHO	1.6734E+01	9.5069E+01	1.1139E+02
M	-1.3629E+01	-2.6202E+01	-3.1203E+01
A	1.5390E+01	2.4500E+01	2.6553E+C1
S	3.4793E+00	3.8343E+00	3.9834E+00
Z	4.9153E+00	6.2314E+00	6.6203E+00
GAME	9.3352E-C1	9.6324E-01	9.4792E-C1
U	5.5666E+01	9.8182E+00	9.8626E+00

SPECIES	MOLE FRACTIONS		
E-	3.8975E-C1	5.1864E-01	5.4692E-01
O	1.9485E-01	6.6018E-03	3.7893E-03
O+	2.1204E-01	3.0471E-01	2.6603E-01
O++	9.4051E-08	9.6413E-03	3.2277E-02
O-	5.7353E-06	2.8436E-07	1.4587E-07
O2	1.3315E-07	1.5883E-10	4.3041E-11
O2+	8.4108E-07	2.9723E-08	1.2694E-08
O2-	5.8727E-12	2.5184E-14	6.9582E-15
C	2.5665E-02	2.1060E-03	1.1763E-03
C+	1.7767E-01	1.2196E-01	8.3282E-02
C++	2.1346E-05	3.6340E-02	6.6525E-02
C-	5.5972E-07	4.0092E-08	1.7809E-08
CO	4.6759E-07	2.0201E-10	4.3682E-11
CO+	1.9178E-06	1.8667E-08	5.6372E-05
CO2	6.7431E-14	5.1854E-19	5.1626E-20
C2	9.6131E-09	1.1704E-11	2.1443E-12

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1 = 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0726E+00
RHO	6.1029E+00	1.9532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9264E+00
S	1.0680E+00	1.0799E+00	1.0974E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1119E-01
U	3.0950E+00	9.6609E-01	8.7895E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.0399E-50	9.0753E-41	3.2225E-32
O	1.0300E-13	6.5854E-11	3.8384E-09
O+	6.3547E-37	4.2314E-33	2.9490E-30
O++	0.	0.	0.
O2-	2.9579E-57	8.9787E-47	1.8684E-37
O2	4.3992E-04	4.3995E-04	4.4315E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2++	0.0357E-51	4.9650E-42	3.7777E-34
C-	1.4926E-51	1.3107E-42	1.2995E-34
C+	8.2339E-62	1.8696E-53	4.8998E-46
C++	0.	0.	0.
C-	2.1456E-96	1.9434E-79	1.3044E-63
CO	7.2263E-11	6.9562E-08	6.4831E-06
CO+	1.0541E-35	2.3091E-31	4.9612E-28
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	9.1543E-76	7.9531E-63	6.1094E-51

P1 = 5.00E+01 N/SQ-M, US1 = 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9480E+02	2.9050E+02
T	3.8892E+00	5.6378E+00	6.3490E+00
RHO	8.0419E+00	3.4488E+01	4.5394E+01
H	8.8932E-01	8.0777E-01	7.6593E-01
A	1.8839E+00	2.2435E+00	2.3658E+00
S	1.1265E+00	1.1510E+00	1.1711E+00
Z	1.0000E+00	1.0020E+00	1.0082E+00
GAME	9.1250E-01	8.9103E-01	8.7449E-01
U	4.5382E+00	1.0589E+00	9.7731E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.8542E-33	1.5913E-18	2.0516E-17
O	2.2710E-09	5.9295E-06	7.2469E-05
O+	9.5171E-31	3.8640E-25	4.1912E-22
O++	0.	0.	1.0413E-90
O-	7.2659E-39	7.9651E-22	2.3491E-19
C2	4.4161E-04	2.4362E-03	8.4727E-03
O2+	1.7597E-18	1.5226E-19	2.1510E-17
O2-	1.2032E-35	1.1864E-20	5.2997E-19
C	1.3432E-35	1.9105E-22	1.1484E-19
C+	5.9468E-47	2.2866E-34	3.7933E-30
C++	0.	3.0296E-83	1.2000E-73
C-	1.5152E-65	2.7147E-38	1.1683E-33
CO	3.4002E-08	4.0002E-03	1.6145E-02
CO+	1.2685E-28	2.9092E-23	1.3714E-20
CO2	9.9955E-01	9.9356E-01	9.7531E-01
C2	2.1245E-52	3.8892E-33	3.7978E-29

P1 = 5.00E+01 N/SQ-M, US1 = 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2170E+02	1.9013E+02
T	3.1957E+00	4.5023E+00	5.2388E+00
RHO	7.1505E+00	2.7034E+01	3.6266E+01
H	9.1903E-01	8.6219E-01	8.2799E-01
A	1.7137E+00	2.0220E+00	2.1712E+00
S	1.0971E+00	1.1156E+00	1.1346E+00
Z	1.0000E+00	1.0000E+00	1.0007E+00
GAME	9.1904E-01	9.0806E-01	8.9022E-01
U	3.8201E+00	1.0098E+00	9.3556E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4706E-40	1.4252E-24	9.8721E-21
O	9.5386E-12	2.0672E-08	1.1878E-06
O+	2.1845E-33	3.4519E-29	8.2458E-27
O++	0.	0.	0.
C-	1.5729E-46	4.1048E-29	8.9169E-25
O2	4.3991E-04	4.7024E-04	1.1121E-03
O2+	1.7597E-18	1.7596E-18	1.7684E-18
O2-	3.9917E-42	4.7300E-27	4.6594E-23
C	3.2954E-42	5.6364E-28	5.3578E-25
C+	4.3131E-53	2.6385E-40	1.1331E-37
C++	0.	0.	4.9567E-94
C-	1.5682E-78	8.9440E-50	1.9738E-43
CO	1.6638E-08	6.0698E-05	1.3462E-03
CO+	1.4454E-31	8.4085E-27	2.0111E-24
CO2	9.9956E-01	9.9947E-01	9.9754E-01
C2	3.5751E-62	4.3645E-41	5.9053E-37

P1 = 5.00E+01 N/SQ-M, US1 = 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1029E+01	2.8952E+02	4.1219E+02
T	4.6579E+00	6.6384E+00	7.1965E+00
RHO	8.8078E+00	4.3027E+01	5.5669E+01
H	8.5507E-01	7.4452E-01	6.9641E-01
A	2.0541E+00	2.4157E+00	2.5209E+00
S	1.1553E+00	1.1864E+00	1.2076E+00
Z	1.0001E+00	1.0137E+00	1.0289E+00
GAME	9.0577E-01	8.6719E-01	8.5827E-01
U	5.2496E+00	1.0762E+00	9.8376E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.3195E-23	1.9567E-15	3.6963E-14
O	1.2266E-07	1.9361E-04	7.6230E-04
O+	3.2953E-28	1.4498E-21	8.2273E-20
O++	0.	5.1639E-91	1.3982E-81
C-	1.3749E-27	1.6977E-18	6.9732E-17
O2	5.7192E-04	1.3713E-02	2.7749E-02
O2+	1.7594E-18	1.9802E-15	3.7599E-14
O2-	7.4483E-26	2.0133E-17	5.6779E-16
C	6.1651E-27	5.3537E-19	2.6349E-17
C+	1.8660E-39	5.7543E-30	2.5063E-28
C++	0.	6.0928E-74	2.7071E-66
C-	1.7223E-47	1.5415E-33	4.8593E-31
CO	2.6424E-04	2.6752E-02	5.5405E-02
CO+	1.1031E-25	7.8878E-20	3.3266E-18
CO2	9.9916E-01	9.5934E-01	9.1608E-01
C2	9.4587E-40	6.9758E-29	6.0800E-27

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1 = 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2156E+01	4.1093E+02	5.6140E+02
T	5.4537E+00	7.4117E+00	7.8651E+00
RHC	9.5437E+00	5.3368E+01	6.7238E+01
H	8.1623E-01	6.7208E-01	6.1812E-01
A	2.2061E+00	2.5660E+00	2.6679E+00
S	1.1836E+00	1.2221E+00	1.2458E+00
Z	1.0020E+00	1.0388E+00	1.0615E+00
GAME	8.9055E-01	8.5519E-01	8.5253E-01
U	5.9635E+00	1.0684E+00	9.8460E-01

P1 = 5.00E+01 N/SQ-M, US1 = 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4757E+01	5.6901E+02	7.5240E+02
T	6.1692E+00	8.0449E+00	8.4469E+00
RHC	1.0397E+01	6.5789E+01	8.0682E+01
H	7.7272E-01	5.9004E-01	5.2997E-01
A	2.3278E+00	2.7142E+00	2.8183E+00
S	1.2119E+00	1.2617E+00	1.2861E+00
Z	1.0096E+00	1.0752E+00	1.1040E+00
GAME	8.7003E-01	8.5172E-01	8.5174E-01
U	6.6892E+00	1.0591E+00	9.8850E-01

SPECIES	MOLE FRACTIONS		
E-	5.5901E-19	1.2171E-13	8.2779E-13
O	6.9906E-06	1.3242E-03	3.0947E-03
O+	5.5874E-26	6.3177E-19	1.0522E-17
O++	0.	1.1629E-81	1.5217E-76
O-	4.4627E-23	3.2317E-16	3.8411E-15
C2	2.4217E-03	3.6427E-02	5.5265E-02
O2+	2.3163E-18	1.2399E-13	8.4917E-13
O2-	1.1194E-21	1.9746E-15	1.7761E-14
C	1.4799E-23	1.5403E-16	2.1645E-15
C+	2.8954E-36	2.4550E-26	1.2414E-24
C++	1.2142E-98	4.0020E-66	5.1968E-62
C-	4.8748E-41	1.3890E-29	1.0720E-27
CO	3.9924E-03	7.3221E-02	1.1280E-01
CO+	7.1458E-24	1.7312E-17	2.1557E-16
CO2	9.9357E-01	8.8892E-01	8.2884E-01
C2	2.4747E-25	1.8332E-25	7.7399E-24

SPECIES	MOLE FRACTIONS		
E-	2.1790E-16	1.6140E-12	7.3080E-12
O	1.0719E-04	4.4945E-03	8.2115E-03
O+	5.9367E-23	1.6021E-17	2.5524E-16
O++	0.	2.0168E-72	3.0721E-71
O-	5.3020E-20	7.7802E-15	5.9925E-14
C2	9.8031E-03	6.5863E-02	8.6395E-02
O2+	2.2035E-16	1.6570E-12	7.5604E-12
O2-	6.6339E-19	3.5612E-14	1.9643E-13
C	1.9370E-20	4.0300E-15	4.2427E-14
C+	4.0430E-32	4.2527E-24	9.5494E-23
C++	3.9282E-80	1.0227E-58	9.2466E-58
C-	2.4575E-36	5.1004E-27	1.1868E-25
CO	1.8842E-02	1.3540E-01	1.8020E-01
CO+	3.5136E-21	4.1762E-16	3.7206E-15
CO2	9.7125E-01	7.9424E-01	7.2519E-01
C2	3.0589E-31	3.4260E-24	4.7135E-22

P1 = 5.00E+01 N/SQ-M, US1 = 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8893E+01	7.7643E+02	1.0020E+03
T	6.7284E+00	8.6155E+00	8.9945E+00
RHC	1.1445E+01	8.0406E+01	9.6423E+01
H	7.2455E-01	4.9811E-01	4.3117E-01
A	2.4303E+00	2.8681E+00	2.9779E+00
S	1.2399E+00	1.3023E+00	1.3286E+00
Z	1.0245E+00	1.1208E+00	1.1553E+00
GAME	8.5685E-01	8.5189E-01	8.5335E-01
U	7.4294E+00	1.0595E+00	1.0001E+00

P1 = 5.00E+01 N/SQ-M, US1 = 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4487E+01	1.0341E+03	1.3104E+03
T	7.1871E+00	9.1523E+00	9.5283E+00
RHC	1.2565E+01	9.6198E+01	1.1323E+02
H	6.7176E-01	3.9678E-01	3.2216E-01
A	2.5287E+00	3.0297E+00	3.1483E+00
S	1.2692E+00	1.3450E+00	1.3734E+00
Z	1.0463E+00	1.1744E+00	1.2147E+00
GAME	8.5036E-01	8.5401E-01	8.5639E-01
U	8.1736E+00	1.0694E+00	1.0200E+00

SPECIES	MOLE FRACTIONS		
E-	6.4917E-15	1.3385E-11	4.1996E-11
O	5.9861E-04	1.0881E-02	1.7398E-02
O+	3.6286E-21	6.2899E-16	3.3840E-15
O++	2.6372E-85	2.3081E-70	3.9938E-66
O-	2.4537E-18	1.2495E-13	5.4446E-13
C2	2.3789E-02	9.7281E-02	1.1744E-01
O2+	6.5225E-15	1.3866E-11	4.3831E-11
O2-	2.6783E-17	3.6439E-13	1.3317E-12
C	4.4047E-19	9.6667E-14	4.7338E-13
C+	3.5473E-28	3.2113E-22	3.0779E-21
C++	4.0410E-69	7.1916E-57	1.0004E-53
C-	5.9908E-32	4.2072E-25	5.1044E-24
CO	4.7318E-02	2.0466E-01	2.5151E-01
CO+	1.2732E-19	8.1819E-15	3.7611E-14
CO2	9.2829E-01	6.8718E-01	6.1366E-01
C2	8.8700E-28	1.4311E-21	1.3124E-20

SPECIES	MOLE FRACTIONS		
E-	9.6765E-14	7.0266E-11	1.8525E-10
O	1.9396E-03	2.1681E-02	3.2071E-02
C+	4.4897E-19	7.9775E-15	3.2063E-14
O++	3.8205E-84	9.2321E-66	6.4880E-62
O-	1.1581E-16	1.0241E-12	3.5119E-12
C2	4.2706E-02	1.2717E-01	1.4502E-01
O2+	9.7407E-14	7.3405E-11	1.9495E-10
O2-	5.3435E-16	2.1998E-12	6.5025E-12
C	7.8980E-17	1.0042E-12	3.7957E-12
C+	8.6036E-27	1.1670E-20	6.6648E-20
C++	5.8842E-68	3.9426E-53	3.2440E-50
C-	1.5077E-30	1.9975E-23	1.4077E-22
CO	8.6510E-02	2.7526E-01	3.2138E-01
CO+	9.5815E-18	7.6797E-14	2.7629E-13
CO2	8.6884E-01	5.7589E-01	5.0153E-01
C2	2.9963E-26	4.0138E-20	2.4115E-19

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1151E+02	1.3440E+03	1.6808E+03
T	7.5778E+00	9.6753E+00	1.0065E+01
RHO	1.3706E+01	1.1245E+02	1.3030E+02
H	6.1439E-01	2.8627E-01	2.0284E-01
A	2.6260E+00	3.2011E+00	3.3317E+00
S	1.2998E+00	1.3897E+00	1.4202E+00
Z	1.0735E+00	1.2352E+00	1.2816E+00
GAME	8.4769E-01	8.5738E-01	8.6051E-01
U	8.9184E+00	1.0888E+00	1.0504E+00

SPECIES	MOLE FRACTIONS		
E-	6.3458E-13	2.8287E-10	6.8714E-10
O	4.5644E-03	3.8246E-02	5.3908E-02
O+	7.7298E-18	6.7047E-14	2.4723E-13
O++	1.2290E-78	3.7989E-62	2.2149E-58
O-(-)	1.2597E-15	5.8387E-12	1.7854E-11
O2-(-)	6.4268E-02	1.5255E-01	1.6618E-01
O2+(-)	3.3986E-13	2.9773E-10	7.2810E-10
O2-(-)	1.1475E-15	9.5959E-12	2.5015E-11
C(-)	1.0813E-15	7.1577E-12	2.4676E-11
C+	4.5866E-25	2.2904E-19	1.1863E-18
C++	1.5363E-63	3.6456E-50	2.6491E-47
C-(-)	1.1905E-28	4.7055E-22	2.9625E-21
CO	1.3228E-01	3.4264E-01	3.8558E-01
CO+	1.1512E-16	5.0396E-13	1.6584E-12
CO2	7.9889E-01	4.6656E-01	3.9433E-01
C2	1.2311E-24	6.3515E-19	3.4087E-18

P1 = 5.00E+01 N/SQ-M, US1= 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4973E+02	2.1202E+03	2.6074E+03
T	8.2467E+00	1.0738E+01	1.1191E+01
RHC	1.5907E+01	1.4341E+02	1.6214E+02
H	4.8590E-01	3.8331E-02	6.5802E-02
A	2.8244E+00	3.5801E+00	3.7436E+00
S	1.3648E+00	1.4839E+00	1.5190E+00
Z	1.1414E+00	1.2770E+00	1.4370E+00
GAME	8.4759E-01	8.6680E-01	8.7146E-01
U	1.0402E+01	1.1555E+00	1.1310E+00

SPECIES	MOLE FRACTIONS		
E-	9.1300E-12	2.8852E-09	6.6978E-09
O	1.5390E-02	9.4728E-02	1.2567E-01
C+	3.5752E-16	2.1196E-12	9.9816E-12
O++	4.8651E-70	2.1866E-53	2.1344E-52
C-	3.4441E-14	5.9297E-11	2.7432E-10
O2	1.0888E-01	1.7936E-01	1.7872E-01
O2+	9.2337E-12	3.0686E-09	7.1332E-09
O2-	7.3230E-14	9.7705E-11	2.1247E-10
C	3.9318E-14	1.8336E-10	7.0684E-10
C+	5.9720E-23	2.1331E-18	2.5538E-16
C++	9.5650E-57	4.4896E-43	2.1636E-42
C-(-)	2.1158E-26	4.0033E-20	6.7163E-19
CO	2.3238E-01	4.5282E-01	4.8249E-01
CO+	3.6059E-15	1.1516E-11	4.1449E-11
CO2	6.4355E-01	2.7309E-01	2.1313E-01
C2	1.4209E-22	4.2884E-17	3.9863E-16

P1 = 5.00E+01 N/SQ-M, US1= 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2993E+02	1.7070E+03	2.1136E+03
T	7.9243E+00	1.0200E+01	1.0615E+01
RHO	1.4834E+01	1.2845E+02	1.4687E+02
H	5.5243E-01	1.6873E-01	7.3634E-02
A	2.7240E+00	3.3840E+00	3.5294E+00
S	1.3317E+00	1.4361E+00	1.4688E+00
Z	1.1054E+00	1.3029E+00	1.3557E+00
GAME	8.4712E-01	8.6169E-01	8.6554E-01
U	9.6619E+00	1.1174E+00	1.0858E+00

SPECIES	MOLE FRACTIONS		
E-	2.6085E-12	9.4551E-10	2.2469E-09
O	8.8960E-03	6.2091E-02	8.4581E-02
C+	5.2299E-17	3.6464E-13	1.6483E-12
O++	5.0143E-74	4.9960E-56	3.0482E-55
C-	7.1110E-15	2.5737E-11	7.5401E-11
O2	8.6831E-02	1.7073E-01	1.7813E-01
O2+	2.6342E-12	1.0018E-09	2.3913E-09
O2-	1.9300E-14	3.3378E-11	7.9261E-11
C	6.7689E-15	3.6717E-11	1.3849E-10
C+	3.8729E-24	2.6164E-19	1.8242E-17
C++	6.4873E-60	2.5579E-45	1.0129E-44
C-(-)	1.0689E-27	2.6919E-21	4.9082E-20
CO	1.8176E-01	4.0287E-01	4.4020E-01
CO+	6.7716E-16	2.4555E-12	8.6647E-12
CO2	7.2251E-01	3.6431E-01	2.9708E-01
C2	1.1524E-23	4.5075E-18	3.9460E-17

P1 = 5.00E+01 N/SQ-M, US1= 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7089E+02	2.5820E+03	3.1617E+03
T	8.5532E+00	1.1299E+01	1.1804E+01
RHC	1.6912E+01	1.5682E+02	1.7563E+02
H	4.1480E-01	9.8862E-02	2.1563E-01
A	2.9285E+00	3.7907E+00	3.9765E+00
S	1.3992E+00	1.5330E+00	1.5705E+00
Z	1.1813E+00	1.4573E+00	1.5251E+00
GAME	8.4880E-01	8.7271E-01	8.7834E-01
U	1.1140E+01	1.2030E+00	1.1865E+00

SPECIES	MOLE FRACTIONS		
E-	2.7349E-11	8.2618E-09	1.8552E-08
O	2.4513E-02	1.3715E-01	1.7781E-01
C+	2.1081E-15	1.4174E-11	5.6683E-11
O++	3.6456E-69	1.0892E-51	6.8578E-50
C-	1.3629E-13	3.4031E-10	8.7601E-10
O2	1.2936E-01	1.7693E-01	1.6678E-01
O2+	2.7695E-11	8.7754E-09	1.9670E-08
O2-	2.2815E-13	2.4313E-10	4.8661E-10
C	1.9215E-13	9.6150E-10	3.4103E-09
C+	1.0879E-21	4.0896E-16	3.4058E-15
C++	7.8658E-56	9.0731E-42	1.8550E-40
C-(-)	4.4011E-25	1.0350E-18	7.9232E-18
CO	2.8248E-01	4.9042E-01	5.1080E-01
CO+	1.6257E-14	5.5709E-11	1.8752E-10
CO2	5.6365E-01	1.9550E-01	1.4461E-01
C2	1.5621E-21	5.9225E-16	3.7108E-15

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9342E+02	3.0903E+03	3.7762E+03
T	8.8490E+00	1.1892E+01	1.2471E+01
RHC	1.7845E+01	1.6835E+02	1.8694E+02
H	3.3913E-01	-2.4480E-01	-3.7608E-01
A	3.0365E+00	4.0179E+00	4.2319E+00
S	1.4349E+00	1.5830E+00	1.6232E+00
Z	1.2250E+00	1.5434E+00	1.6198E+00
GAME	8.5056E-01	8.7951E-01	8.8653E-01
U	1.1876E+01	1.2604E+00	1.2530E+00

SPECIES	MOLE FRACTIONS		
E-	6.8371E-11	2.1927E-08	4.8560E-08
O	3.6768E-02	1.8941E-01	2.4006E-01
O+	6.9729E-15	8.1223E-11	3.1248E-10
O++	3.9492E-65	3.0657E-49	2.4811E-47
O-	4.1355E-13	1.0183E-09	2.4870E-09
C2	1.4726E-01	1.6298E-01	1.4287E-01
O2+	6.9321E-11	2.3133E-08	5.0850E-08
O2-	5.9443E-13	5.1841E-10	9.5187E-10
C	6.2548E-13	4.6068E-09	1.6261E-08
C+	1.6320E-21	6.5991E-15	4.6196E-14
C++	1.4188E-52	1.6172E-39	7.4047E-38
C-	1.0479E-24	1.2888E-17	8.5166E-17
CO	3.3057E-01	5.1479E-02	5.2525E-02
CO+	5.1185E-14	2.4888E-10	8.3648E-10
CO2	4.8540E-01	1.3283E-01	9.1821E-02
C2	5.5702E-21	5.8273E-15	3.4083E-14

P1 = 5.00E+01 N/SQ-M, US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4255E+02	4.2237E+03	5.1719E+03
T	9.4348E+00	1.3248E+01	1.4147E+01
RHC	1.9431E+01	1.8424E+02	2.0044E+02
H	1.7407E-01	-5.6253E-01	-7.3088E-01
A	3.2674E+00	4.5372E+00	4.8562E+00
S	1.5095E+00	1.6844E+00	1.7304E+00
Z	1.3230E+00	1.7305E+00	1.8240E+00
GAME	8.5528E-01	8.9796E-01	9.1394E-01
U	1.3337E+01	1.4084E+00	1.4328E+00

SPECIES	MOLE FRACTIONS		
E-	3.7011E-10	1.2892E-07	3.2247E-07
O	7.2886E-02	3.1686E-01	3.8212E-01
O+	1.0973E-13	1.9299E-09	1.1122E-08
O++	1.8254E-61	4.0283E-44	5.4608E-41
C-	3.2219E-12	6.4020E-09	1.5260E-08
O2	1.7157E-01	1.0551E-01	6.9876E-02
O2+	3.7573E-10	1.3064E-07	3.0708E-07
O2-	3.0457E-12	1.4986E-09	2.1505E-09
C	7.3316E-12	8.8487E-08	4.9170E-07
C+	1.9804E-19	7.7102E-13	1.3158E-11
C++	1.4117E-49	4.4832E-35	2.5512E-32
C-	1.0734E-22	9.4160E-16	1.0712E-14
CO	4.1535E-01	5.2738E-01	5.2139E-01
CO+	5.3329E-13	4.2423E-09	2.1668E-08
CO2	3.4019E-01	5.0251E-02	2.6619E-02
C2	2.1230E-19	3.6169E-13	4.2733E-12

P1 = 5.00E+01 N/SQ-M, US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1730E+02	3.6384E+03	4.4454E+03
T	9.1428E+00	1.2532E+01	1.3223E+01
RHC	1.8680E+01	1.7759E+02	1.9542E+02
H	2.5889E-01	-3.9937E-01	-5.4750E-01
A	3.1494E+00	4.2642E+00	4.5176E+00
S	1.4716E+00	1.6336E+00	1.6766E+00
Z	1.2722E+00	1.6349E+00	1.7202E+00
GAME	8.5272E-01	8.8753E-01	8.9721E-01
U	1.2608E+01	1.3278E+00	1.3329E+00

SPECIES	MOLE FRACTIONS		
E-	1.7015E-10	5.3743E-08	1.2340E-07
O	5.2709E-02	2.5038E-01	3.0963E-01
C+	3.5890E-14	3.8161E-10	1.7711E-09
O++	1.2681E-64	5.0310E-47	6.6038E-44
C-	1.2725E-12	2.6716E-09	6.3732E-09
O2	1.6162E-01	1.3822E-01	1.0932E-01
O2+	1.7262E-10	5.6002E-08	1.2564E-07
O2-	1.4270E-12	9.5488E-10	1.5740E-09
C	2.5521E-12	1.9315E-08	8.2377E-08
C+	5.6901E-20	6.2311E-14	7.1101E-13
C++	4.9368E-52	1.4148E-37	6.1369E-35
C-	2.6491E-23	1.0493E-16	9.1078E-16
CO	3.7525E-01	5.2628E-01	5.2775E-01
CO+	1.9256E-13	9.8594E-10	3.9419E-09
CO2	4.1042E-01	8.5129E-02	5.3302E-02
C2	5.6407E-20	4.2195E-14	3.4433E-13

P1 = 5.00E+01 N/SQ-M, US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6909E+02	4.8346E+03	5.9551E+03
T	9.7317E+00	1.4113E+01	1.5523E+01
RHC	2.0077E+01	1.8745E+02	1.9948E+02
H	8.4691E-02	-7.3406E-01	-9.2890E-01
A	3.3913E+00	4.8554E+00	5.3281E+00
S	1.5483E+00	1.7351E+00	1.7843E+00
Z	1.3771E+00	1.8275E+00	1.9232E+00
GAME	8.5816E-01	9.1405E-01	9.5098E-01
U	1.4064E+01	1.5081E+00	1.5733E+00

SPECIES	MOLE FRACTIONS		
E-	8.0010E-10	3.1730E-07	1.0815E-06
O	9.7758E-02	3.8456E-01	4.4969E-01
C+	4.2018E-13	1.1093E-08	1.1530E-07
O++	1.1226E-60	4.8723E-41	8.6413E-37
O-	8.0278E-12	1.4344E-08	3.8407E-08
O2	1.7643E-01	6.8478E-02	3.0557E-02
O2+	8.1211E-10	3.0110E-07	7.9892E-07
O2-	6.0411E-12	1.9619E-09	2.2712E-09
C	2.3883E-11	4.8567E-07	5.6830E-06
C+	1.7852E-18	1.3106E-11	7.5231E-10
C++	9.9334E-49	2.4103E-32	1.6880E-28
C-	8.5169E-22	5.8785E-15	2.7758E-13
CO	4.4997E-01	5.2104E-01	5.1034E-01
CO+	1.6383E-12	2.1401E-08	2.0717E-07
CO2	2.7584E-01	2.5924E-02	9.4010E-03
C2	1.2272E-18	4.0603E-12	1.4332E-10

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1 = 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9699E+02	5.4600E+03	6.8273E+03
T	1.0034E+01	1.5336E+01	1.8403E+01
RHO	2.063CE+01	1.8560F+02	1.8664E+02
H	-9.2612E-03	-9.1367E-01	-1.1522E+00
A	3.5215E+00	5.2783E+00	6.1241E+00
S	1.5879E+00	1.7847E+00	1.8377E+00
Z	1.4347E+00	1.9183E+00	1.9877E+00
GAME	8.6138E-01	9.4702E-01	1.0253E+00
U	1.4788E+01	1.6455E+00	1.8347E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6119E-09	9.3912E-07	1.1458E-05
O	1.2775E-01	4.4648E-01	4.9189E-01
C+	1.3011E-12	9.1541F-08	3.1917E-06
O++	2.7943E-60	1.2972E-37	2.5655E-30
C-	1.8071E-11	3.2772E-08	1.8671E-07
O2	1.7554E-01	3.2466E-02	5.2132E-03
O2+	1.6354E-09	7.1820E-07	1.8186E-06
O2-	1.1075E-11	2.0437E-09	2.1102E-09
C-	1.6884E-11	4.3693E-06	3.9209E-04
C+	1.8649E-18	4.8491E-10	5.1775E-07
C++	1.5883E-47	3.6846E-29	1.9163E-22
C-	4.0357E-21	1.8050E-13	9.1718E-11
CO	4.7822E-01	5.1094E-01	5.0109E-01
CO+	4.3964E-12	1.6370E-07	6.1184E-06
CO2	2.1849E-01	1.0109E-02	1.3836E-03
C2	4.9926E-18	9.3279E-11	6.6803E-08

P1 = 5.00E+01 N/SQ-M, US1 = 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5673E+02	6.6572E+03	8.6092E+03
T	1.0673E+01	2.0563E+01	2.3083E+01
RHO	2.1429E+01	1.6138E+02	1.7976E+02
H	-2.1087E-01	-1.2941E+00	-1.6127E+00
A	3.8032E+00	6.3202E+00	6.5535E+00
S	1.6695E+00	1.8727E+00	1.9238E+00
Z	1.5596E+00	2.0061E+00	2.0748E+00
GAME	8.6894E-01	9.6835E-01	8.9678E-01
U	1.6227E+01	2.1574E+00	2.2015E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.0344E-09	6.6171E-05	3.7798E-04
O	2.0297E-01	5.0004E-01	5.1711E-01
C+	1.2943E-11	1.5282E-05	4.6693E-05
O++	1.3757E-54	6.5428E-27	4.7577E-24
C-	7.8664E-11	5.8220E-07	2.4431E-06
O2	1.5613E-01	1.6111E-03	7.4156E-04
O2+	6.0980E-09	1.8337E-06	1.7616E-06
O2-	3.0004E-11	2.2609E-09	4.7550E-09
C	5.3349E-10	4.9640E-03	3.6274E-02
C+	2.6448E-16	1.8164E-05	2.3874E-04
C++	1.2028E-43	3.3673E-19	1.1752E-16
C-	9.6795E-20	3.7054E-09	1.1378E-07
CO	5.1467E-01	4.9284E-01	4.4491E-01
CO+	3.2053E-11	3.1480E-05	9.3349E-05
CO2	1.2623E-01	4.0646E-04	1.6129E-04
C2	5.1370E-17	2.5735E-06	4.7919E-05

P1 = 5.00E+01 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2620E+02	6.0676E+03	7.7376E+03
T	1.0347E+01	1.7531E+01	2.1607E+01
RHO	2.1081E+01	1.7478E+02	1.7716E+02
H	-1.0778E-01	-1.1003E+00	-1.3871E+00
A	3.6585E+00	5.9401E+00	6.3771E+00
S	1.6284E+00	1.8314E+00	1.8840E+00
Z	1.4956E+00	1.9803E+00	2.0214E+00
GAME	8.6494E-01	1.0164E+00	9.3111E-01
U	1.5509E+01	1.8723E+00	2.0943E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.1423E-09	5.8243E-06	1.3558E-04
O	1.6294E-01	4.8727E-01	5.0420E-01
O+	3.8408E-12	1.4972E-06	2.5180E-05
O++	2.8931E-55	6.1524E-32	1.2339E-25
O-	3.8551E-11	1.1022E-07	1.0776E-06
O2	1.6870E-01	7.9527E-03	1.1701E-03
O2+	3.1845E-09	1.5607E-06	1.8681E-06
O2-	1.8932E-11	1.8140E-09	3.1761E-09
C	1.8062E-10	1.3426E-04	1.1859E-02
C+	3.2830E-17	1.0797E-07	5.6949E-05
C++	2.2017E-44	6.2385E-24	4.5658E-18
C-	1.6780E-20	1.8379E-11	1.6502E-08
CO	4.9974E-01	5.0247E-01	4.8221E-01
CO+	1.1434E-11	2.7705E-06	5.2684E-05
CO2	1.6862E-01	2.1572E-03	2.8472E-04
C2	1.8427E-17	1.3491E-08	9.5699E-06

P1 = 5.00E+01 N/SQ-M, US1 = 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8856E+02	7.3133E+03	9.4708E+03
T	1.1018E+01	2.2355E+01	2.4047E+01
RHO	2.1681E+01	1.5977E+02	1.8432E+02
H	-3.1851E-01	-1.4983E+00	-1.8410E+00
A	3.9566E+00	6.4405E+00	6.7558E+00
S	1.7112E+00	1.9107E+00	1.9624E+00
Z	1.6267E+00	2.0476E+00	2.1367E+00
GAME	8.7351E-01	9.0617E-01	8.8828E-01
U	1.6542E+01	2.3028E+00	2.2582E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1120E-08	2.4987E-04	6.7969E-04
O	2.4747E-01	5.1076E-01	5.3094E-01
O+	3.7127E-11	3.6015E-05	6.6725E-05
O++	1.6740E-52	8.9965E-25	4.1017E-23
O-	1.5083E-10	1.5954E-06	4.0490E-06
C2	1.3805E-01	8.2320E-04	5.9890E-04
O2+	1.1196E-08	1.6771E-06	1.7713E-06
O2-	4.4440E-11	3.3821E-09	6.4730E-09
C	1.4148E-09	2.3867E-02	6.3406E-02
C+	1.1256E-15	1.4001E-04	4.9333E-04
C++	3.8995E-42	3.0128E-17	7.0535E-16
C-	3.8568E-19	4.9033E-08	3.2474E-07
CO	5.2302E-01	4.6383E-01	4.0346E-01
CO+	8.2004E-11	7.3812E-05	1.2224E-04
CO2	9.1461E-02	1.8950E-04	1.1456E-04
C2	3.3690E-16	2.4994E-05	1.0485E-04

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2166E+02	8.0009E+03	1.0325E+04
T	1.1390E+01	2.3424E+01	2.4822E+01
RHO	2.1822E+01	1.6241E+02	1.8872E+02
H	-4.3072E-01	-1.7122E+00	-2.0771E+00
A	4.1213E+00	6.6245E+00	6.9628E+00
S	1.7534E+00	1.9481E+00	2.0014E+00
Z	1.6964E+00	2.1032E+00	2.2041E+00
GAME	8.7905E-01	8.9078E-01	8.8614E-01
U	1.7654E+01	2.3762E+00	2.3079E+00

SPECIES	MOLE FRACTIONS		
E-	2.0347E-08	5.0804E-04	1.0382E-03
O	2.9518E-01	5.2362E-01	5.4500E-01
O+	1.1323E-10	5.4620E-05	8.8343E-05
O++	8.1307E-50	1.1023E-23	2.0075E-22
O-	2.7785E-10	2.8721E-06	5.9191E-06
O2	1.1560E-01	6.1960E-04	5.2573E-04
O2+	2.0350E-08	1.6333E-06	1.8398E-06
O2+	6.0773E-11	4.6865E-09	8.3340E-09
C	3.9831E-09	4.8883E-02	9.1176E-02
C+	5.3959E-15	3.5030E-16	8.0944E-04
C++	1.1838E-39	2.6108E-16	2.5353E-15
C-	1.6702E-18	1.7877E-07	6.7092E-07
CO	5.2586E-01	4.2566E-01	3.6095E-01
CO+	2.2221E-10	1.0454E-04	1.4514E-04
CO2	6.3356E-02	1.2713E-04	8.7531E-05
C2	1.3713E-15	6.9220E-05	1.7115E-04

P1 = 5.00E+01 N/SQ-M, US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9151E+02	9.3239E+03	1.1917E+04
T	1.2311E+01	2.4921E+01	2.6151E+01
RHC	2.1690E+01	1.6761E+02	1.9393E+02
H	-6.6875E-01	-2.1646E+00	-2.5733E+00
A	4.5107E+00	7.0172E+00	7.3857E+00
S	1.8381E+00	2.0244E+00	2.0813E+00
Z	1.8407E+00	2.2322E+00	2.3499E+00
GAME	8.5787E-01	8.8517E-01	8.8766E-01
U	1.9060E+01	2.4709E+00	2.4001E+00

SPECIES	MOLE FRACTIONS		
E-	7.1901E-08	1.1875E-03	1.9519E-03
O	3.9461E-01	5.5064E-01	5.7240E-01
O+	1.5173E-09	9.4858E-05	1.4296E-04
O++	1.7711E-46	2.6773E-22	2.7523E-21
O-	8.6226E-10	6.0605E-06	1.0493E-05
O2	6.2349E-02	4.6856E-04	4.3707E-04
O2+	6.8930E-08	1.7254E-06	2.0608E-06
O2+	8.5785E-11	7.5629E-09	1.2304E-08
C	4.8150E-08	1.0225E-01	1.4550E-01
C+	4.5336E-13	9.5029E-16	1.6391E-03
C++	1.5898E-36	3.4127E-15	1.8606E-14
C-	5.3251E-17	7.6314E-07	1.8313E-06
CO	5.1883E-01	3.4399E-01	2.7738E-01
CO+	2.4013E-09	1.4751E-04	1.8005E-04
CO2	2.4207E-02	7.3513E-05	5.3056E-05
C2	5.0183E-14	1.8684E-04	3.0227E-04

P1 = 5.00E+01 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5600E+02	8.6828E+03	1.1152E+04
T	1.1809E+01	2.4234E+01	2.5510E+01
RHO	2.1838E+01	1.6546E+02	1.9213E+02
H	-5.4747E-01	-1.9345E+00	-2.3212E+00
A	4.3025E+00	6.8196E+00	7.1724E+00
S	1.7957E+00	1.9859E+00	2.0409E+00
Z	1.7682E+00	2.1655E+00	2.2753E+00
GAME	8.8649E-01	8.8622E-01	8.8627E-01
U	1.8360E+01	2.4275E+00	2.3543E+00

SPECIES	MOLE FRACTIONS		
E-	3.7664E-08	8.2080E-04	1.4583E-03
O	3.4479E-01	5.3712E-01	5.5888E-01
O+	3.9938E-10	7.3685E-05	1.1325E-04
O++	7.6621E-49	6.3814E-23	7.8143E-22
O-	4.9488E-10	4.3631E-06	8.0666E-06
O2	8.9911E-02	5.2613E-04	4.7624E-04
O2+	3.7145E-08	1.6617E-06	1.9402E-06
O2+	7.6119E-11	6.0952E-09	1.0304E-08
C	1.3080E-08	7.5481E-02	1.1867E-01
C+	5.0607E-14	6.2200E-04	1.1882E-03
C++	1.2306E-38	1.1033E-15	7.2840E-15
C-	9.2407E-18	4.1271E-07	1.1688E-06
CO	5.2412E-01	3.8500E-01	3.1873E-01
CO+	6.8970E-10	1.2823E-04	1.6420E-04
CO2	4.1182E-02	9.4940E-05	6.8158E-05
C2	7.9089E-15	1.2577E-04	2.3898E-04

P1 = 5.00E+01 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2802E+02	9.8570E+03	1.2543E+04
T	1.2986E+01	2.5532E+01	2.6761E+01
RHC	2.1281E+01	1.6769E+02	1.9308E+02
H	-7.9450E-01	-2.4012E+00	-2.8332E+00
A	4.7767E+00	7.2156E+00	7.6034E+00
S	1.8800E+00	2.0639E+00	2.1229E+00
Z	1.9107E+00	2.3023E+00	2.4274E+00
GAME	9.1960E-01	8.8573E-01	8.8994E-01
U	1.9748E+01	2.5103E+00	2.4520E+00

SPECIES	MOLE FRACTIONS		
E-	1.5330E-07	1.6133E-03	2.5371E-03
O	4.4181E-01	5.6391E-01	5.8544E-01
O+	7.4236E-09	1.1917E-04	1.7926E-04
O++	4.0490E-43	9.1631E-22	8.8515E-21
O-	1.5271E-09	7.9262E-06	1.3159E-05
O2	3.5045E-02	4.2545E-04	4.0123E-04
O2+	1.3639E-07	1.8036E-06	2.1902E-06
O2+	8.2919E-11	8.9765E-09	1.4155E-08
C	2.4051E-07	1.2857E+01	1.7145E-01
C+	5.6690E-12	1.3383E-03	2.1789E-03
C++	1.4084E-33	8.7947E-15	4.3797E-14
C-	4.1453E-16	1.2332E-06	2.6605E-06
CO	5.1144E-01	3.0354E-01	2.3720E-01
CO+	1.1089E-08	1.6317E-04	1.9264E-04
CO2	1.1712E-02	5.7431E-05	4.0863E-05
C2	4.6094E-13	2.4591E-04	3.5529E-04

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 5.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6506E+02	1.0112E+04	1.2805E+04
T	1.4115E+01	2.6072E+01	2.7327E+01
RHO	2.0338E+01	1.6334E+02	1.8698E+02
H	-9.2456E-01	-2.6414E+00	-3.0949E+00
A	5.2022E+00	7.4108E+00	7.8198E+00
S	1.9205E+00	2.1050E+00	2.1660E+00
Z	1.9684E+00	2.3745E+00	2.5061E+00
GAME	9.7408E-01	8.8713E-01	8.9290E-01
U	2.0407E+01	2.5450E+00	2.4947E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.9030E-07	2.1030E-03	3.2266E-03
O	4.7976E-01	5.7649E-01	5.9771E-01
O+	7.6069E-08	1.4709E-04	2.2319E-04
O++	9.7139E-40	2.6233E-21	2.5533E-20
C	3.2226E-09	9.8057E-06	1.5810E-05
O2	1.2428E-02	3.8565E-04	3.6341E-04
O2+	3.0323E-07	1.8712E-06	2.2997E-06
O2++	6.4454E-11	1.0040E-09	1.5385E-08
C+	3.1850E-06	1.5395E-01	1.9590E-01
C++	4.5505E-10	1.7908E-03	2.8196E-03
C+	2.0529E-30	1.9769E-14	9.5360E-14
C-	1.1516E-14	1.7958E-06	3.5952E-06
CO	5.0416E-01	2.6440E-01	1.9911E-01
CC+	1.1383E-07	1.7480E-04	2.0086E-04
CC2	3.6500E-03	4.4301E-05	3.0248E-05
C2	2.0102E-11	2.9556E-04	3.9035E-04

P1 = 5.00E+01 N/SQ-M, US1= 6.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3950E+02	9.7483E+03	1.2230E+04
T	1.8492E+01	2.6990E+01	2.8385E+01
RHO	1.7221E+01	1.4320E+02	1.6171E+02
H	-1.1971E+00	-3.1242E+00	-3.6188E+00
A	5.9732E+00	7.7910E+00	8.2566E+00
S	1.9908E+00	2.1916E+00	2.2564E+00
Z	2.0080E+00	2.5222E+00	2.6644E+00
GAME	9.6079E-01	8.9168E-01	9.0141E-01
U	2.1610E+01	2.6025E+00	2.5760E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.6610E-05	3.3242E-03	5.0727E-03
O	5.0168E-01	6.0017E-01	6.1951E-01
O+	9.9272E-06	2.1790E-04	3.4754E-04
O++	2.9889E-29	1.6631E-20	1.8401E-19
C	7.0613E-08	1.3196E-05	2.0626E-05
O2	4.8038E-04	3.0676E-04	2.8051E-04
O2+	5.0329E-07	1.9447E-06	2.4397E-06
O2++	7.2595E-11	1.0671E-08	1.5477E-08
C	4.5371E-03	2.0075E-01	2.3963E-01
C+	1.7806E-05	2.9346E-03	4.5453E-03
C++	2.2203E-20	7.9869E-14	4.0651E-13
C-	3.9451E-10	3.0535E-06	5.5832E-06
CO	4.9308E-01	1.9171E-01	1.2996E-01
CO+	1.8445E-05	1.8599E-04	2.0366E-04
CC2	1.2289E-04	2.4498E-05	1.4675E-05
C2	7.8559E-07	3.4974E-04	3.9631E-04

P1 = 5.00E+01 N/SQ-M, US1= 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0172E+02	9.8809E+03	1.2449E+04
T	1.6215E+01	2.6520E+01	2.7823E+01
RHO	1.8602E+01	1.5224E+02	1.7313E+02
H	-1.0586E+00	-2.8792E+00	-3.3524E+00
A	5.8115E+00	7.5960E+00	8.0286E+00
S	1.9578E+00	2.1484E+00	2.2113E+00
Z	1.9945E+00	2.4474E+00	2.5844E+00
GAME	1.0441E+00	8.8898E-01	8.9644E-01
U	2.1009E+01	2.5710E+00	2.5318E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.5152E-06	2.6596E-03	4.0384E-03
O	4.9681E-01	5.8872E-01	6.0899E-01
O+	1.4274E-06	1.7846E-04	2.7560E-04
O++	1.0247E-33	6.6218E-21	6.5457E-20
C	1.3715E-08	1.1406E-05	1.8024E-05
O2	2.1354E-03	3.4306E-04	3.2011E-04
O2+	5.2649E-07	1.8958E-06	2.3523E-06
O2++	5.4166E-11	1.0344E-08	1.5417E-08
C	1.6836E-04	1.7788E-01	2.1846E-01
C+	1.9255E-07	2.3117E-03	3.5797E-03
C++	1.3683E-24	4.0027E-14	1.9229E-13
C-	2.6988E-12	2.3740E-06	4.5044E-06
CO	5.0020E-01	2.2725E-01	1.6369E-01
CC+	2.3826E-06	1.8131E-04	2.0333E-04
CC2	5.7612E-04	3.3151E-05	2.1479E-05
C2	6.4840E-09	3.2798E-04	4.0080E-04

P1 = 5.00E+01 N/SQ-M, US1= 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.8061E+02	1.0212E+04	1.2787E+04
T	1.9738E+01	2.7603E+01	2.9184E+01
RHO	1.6924E+01	1.4225E+02	1.5936E+02
H	-1.3408E+00	-3.3904E+00	-3.9140E+00
A	6.0163E+00	8.0196E+00	8.5424E+00
S	2.0216E+00	2.2327E+00	2.3001E+00
Z	2.0375E+00	2.6008E+00	2.7494E+00
GAME	9.0003E-01	8.9589E-01	9.0946E-01
U	2.2282E+01	2.6557E+00	2.6474E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5932E-04	4.1794E-03	6.5615E-03
O	5.0898E-01	6.1128E-01	6.2952E-01
O+	1.9629E-05	2.7476E-04	4.6556E-04
O++	1.9043E-27	5.1230E-20	7.2777E-19
C	1.8173E-07	1.5936E-05	2.4955E-05
O2	2.6027E-04	2.8085E-04	2.4756E-04
O2+	4.2546E-07	2.0886E-06	2.6655E-06
O2++	1.0697E-10	1.1827E-08	1.6675E-08
C	1.8451E-02	2.2301E-01	2.5995E-01
C+	1.0284E-04	3.7306E-03	5.9209E-03
C++	1.0118E-18	1.7682E-13	1.0449E-12
C-	4.1563E-09	4.0430E-06	7.2550E-06
CO	4.7192E-01	1.5664E-01	9.6706E-02
CO+	3.6612E-05	1.9190E-04	2.0461E-04
CC2	6.2148E-05	1.7972E-05	9.4704E-06
C2	5.5797E-06	3.6810E-04	3.8265E-04

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 6.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2401E+02	1.0934E+04	1.3688E+04
T	2.0483E+01	2.8333E+01	3.0226E+01
RHO	1.7023E+01	1.4384E+02	1.5966E+02
H	-1.4895E+00	-3.6711E+00	-4.2299E+00
A	6.1265E+00	8.2804E+00	8.8913E+00
S	2.0518E+00	2.2739E+00	2.3434E+00
Z	2.0764E+00	2.6830E+00	2.8363E+00
GAME	8.8249E-01	9.0196E-01	9.2212E-01
U	2.2987E+01	2.7241E+00	2.7408E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.1314E-04	5.3194E-03	8.8191E-03
O	5.1809E-01	6.2187E-01	6.3820E-01
O+	2.7558E-05	3.5812E-04	6.6794E-04
O++	1.7386E-26	1.8473E-19	3.9096E-18
C-	3.1705E-07	1.9574E-05	3.1052E-05
O2	1.9557E-04	2.5611E-04	2.1272E-04
O2+	3.9220E-07	2.2956E-06	3.0015E-06
O2-	1.4375E-10	1.3338E-08	1.8138E-08
C	3.6475E-02	2.4436E-01	2.7792E-01
C+	2.3628E-04	4.7873E-03	7.9863E-03
C++	6.9875E-18	4.2806E-13	3.2533E-12
C-	1.4274E-08	5.3804E-06	9.5899E-06
CO	4.4455E-01	1.2244E-01	6.5602E-02
CO+	4.9244E-05	1.9665E-04	2.0245E-04
CO2	4.2970E-05	1.2577E-05	5.4353E-06
C2	1.5823E-05	3.7441E-04	3.4759E-04

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1573E+02	1.2667E+04	1.5945E+04
T	2.1496E+01	3.0212E+01	3.3583E+01
RHO	1.7515E+01	1.4722E+02	1.5815E+02
H	-1.8009E+00	-4.2633E+00	-4.9207E+00
A	6.3779E+00	8.9136E+00	9.8820E+00
S	2.1126E+00	2.3551E+00	2.4305E+00
Z	2.1665E+00	2.8478E+00	3.0022E+00
GAME	8.7343E-01	9.2345E-01	9.6860E-01
U	2.4422E+01	2.9093E+00	3.0406E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	7.0227E-04	9.1589E-03	1.9693E-02
O	5.3778E-01	6.3925E-01	6.4544E-01
O+	4.2858E-05	6.8963E-04	1.9396E-03
O++	2.7501E-25	4.1033E-18	5.0383E-16
O-	6.4457E-07	2.9955E-05	5.1337E-05
O2	1.4743E-04	1.9814E-04	1.2668E-04
O2+	3.8135E-07	2.8849E-06	4.1460E-06
O2-	2.2323E-10	1.6265E-08	1.9282E-08
C	7.5684E-02	2.8010E-01	2.9640E-01
C+	5.9294E-04	8.3094E-03	1.7641E-02
C++	6.8561E-17	3.4653E-12	8.1445E-11
C-	5.8930E-08	9.3077E-06	1.7051E-05
CO	3.8492E-01	6.1719E-02	1.8318E-02
CO+	6.6798E-05	1.9626E-04	1.7688E-04
CO2	2.6856E-05	4.7556E-06	8.8724E-07
C2	4.3555E-05	3.2802E-04	1.9896E-04

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6911E+02	1.1769E+04	1.4753E+04
T	2.1036E+01	2.9183E+01	3.1621E+01
RHO	1.7246E+01	1.4581E+02	1.5969E+02
H	-1.6429E+00	-3.9625E+00	-4.5638E+00
A	6.2505E+00	8.5730E+00	9.3300E+00
S	2.0821E+00	2.3146E+00	2.3868E+00
Z	2.1200E+00	2.7658E+00	2.9218E+00
GAME	8.7608E-01	9.1060E-01	9.4220E-01
U	2.3702E+01	2.8072E+00	2.8625E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	4.9503E-04	6.8755E-03	1.2600E-02
O	5.2783E-01	6.3134E-01	6.4430E-01
O+	3.5073E-05	4.8368E-04	1.0590E-03
O++	8.0431E-26	7.8213E-19	3.2542E-17
O-	4.7105E-07	2.4142E-05	3.9479E-05
O2	1.6534E-04	2.2925E-04	1.7216E-04
O2+	3.8112E-07	2.5573E-06	3.4705E-06
O2-	1.8230E-10	1.4894E-08	1.9214E-08
C	5.5859E-02	2.6365E-01	2.9137E-01
C+	4.0121E-04	6.2219E-03	1.1396E-02
C++	2.5306E-17	1.1366E-12	1.3358E-11
C-	3.2159E-08	7.0978E-06	1.2774E-05
CO	4.1509E-01	9.0597E-02	3.8560E-02
CO+	5.8875E-05	1.9856E-04	1.9405E-04
CO2	3.3174E-05	8.1921E-06	2.5544E-06
C2	2.8753E-05	3.6241E-04	2.8471E-04

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6378E+02	1.3604E+04	1.7230E+04
T	2.1906E+01	3.1529E+01	3.6080E+01
RHO	1.7799E+01	1.4745E+02	1.5533E+02
H	-1.9636E+00	-4.5726E+00	-5.2961E+00
A	6.5069E+00	9.3263E+00	1.0437E+01
S	2.1444E+00	2.3952E+00	2.4732E+00
Z	2.2153E+00	2.9264E+00	3.0744E+00
GAME	8.7247E-01	9.4270E-01	9.8195E-01
U	2.5145E+01	3.0390E+00	3.2521E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	9.3549E-04	1.2823E-02	3.2173E-02
O	5.4774E-01	6.4461E-01	6.3878E-01
O+	5.1301E-05	1.0677E-03	3.8800E-03
O++	7.9003E-25	3.0887E-17	1.1099E-14
O-	8.3951E-07	3.7546E-05	6.6016E-05
O2	1.3526E-04	1.6201E-04	8.6855E-05
O2+	3.8840E-07	3.3103E-06	5.0414E-06
O2-	2.6692E-10	1.7145E-08	1.8158E-08
C	9.5557E-02	2.9202E-01	2.8902E-01
C+	8.1116E-04	1.1614E-02	2.8222E-02
C++	1.5779E-16	1.3238E-11	6.1731E-10
C-	9.5725E-08	1.2163E-05	2.1850E-05
CO	3.5462E-01	3.7185E-02	7.4723E-03
CO+	7.3586E-05	1.8808E-04	1.5381E-04
CO2	2.2250E-05	2.3172E-06	2.4871E-07
C2	5.9319E-05	2.6998E-04	1.2038E-04

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1322E+02	1.4563E+04	1.8583E+04
T	2.2286E+01	3.3256E+01	3.8686E+01
RHO	1.8082E+01	1.4607E+02	1.5274E+02
H	-2.1308E+00	-4.8898E+00	-5.6840E+00
A	6.6378E+00	9.8159E+00	1.0901E+01
S	2.1745E+00	2.4342E+00	2.5146E+00
Z	2.2662E+00	2.9980E+00	3.1448E+00
GAME	8.7241E-01	9.6643E-01	9.7679E-01
U	2.5867E+01	3.2069E+00	3.4670E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1971E-03	1.9096E-02	4.9631E-02
O	5.5761E-01	6.4568E-01	6.2512E-01
O+	6.0718E-05	1.8310E-03	7.3301E-03
O++	2.0488E-24	3.5185E-16	1.8657E-13
O--	1.0583E-06	4.7452E-05	8.0351E-05
O2	1.2610E-04	1.2314E-04	6.0441E-05
O2+	4.0011E-07	3.8751E-06	6.0292E-06
O2-	3.1360E-10	1.7182E-08	1.6526E-08
O2++	1.1526E-01	2.9655E-01	2.7210E-01
O2--	1.0576E-03	1.7151E-02	4.2269E-02
C+	3.2940E-16	1.6150E-11	3.8511E-09
C-	1.4375E-07	5.6737E-05	2.5821E-05
CO	3.2451E-01	1.9133E-02	3.1776E-03
CO+	7.9536E-05	1.7301E-04	1.3206E-04
CO2	1.8616E-05	9.0129E-07	7.4313E-08
C2	7.5263E-05	1.9602E-04	7.0814E-05

P1 = 5.00E+01 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0162E+03	1.6529E+04	2.1412E+04
T	2.3005E+01	3.7621E+01	4.3146E+01
RHO	1.8615E+01	1.4072E+02	1.5083E+02
H	-2.4790E+00	-5.5479E+00	-6.4810E+00
A	6.9070E+00	1.0722E+01	1.1684E+01
S	2.2380E+00	2.5085E+00	2.5908E+00
Z	2.3729E+00	3.1223E+00	3.2902E+00
GAME	8.7391E-01	9.7862E-01	9.6171E-01
U	2.7311E+01	3.6172E+00	3.8398E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
F-	1.8231E-03	4.2662E-02	8.9390E-02
O	5.7685E-01	6.3018E-01	5.8848E-01
O+	8.3861E-05	5.9659E-03	1.8214E-02
O++	1.2406E-23	6.7300E-14	1.0782E-11
C-	1.5789E-06	7.1158E-05	1.0083E-04
O2	1.1224E-04	6.3798E-05	3.4928E-05
O2+	4.3354E-07	5.3761E-06	7.8203E-06
O2-	4.1597E-10	1.5025E-08	1.3667E-08
C	1.5371E-01	2.7811E-01	2.3153E-01
C+	1.6513E-03	3.7651E-02	7.1198E-02
C++	1.2421E-15	2.0485E-09	5.1316E-08
C-	2.7905E-07	2.3105E-05	2.9562E-05
CO	2.6556E-01	4.0611E-03	8.7522E-04
CO+	8.9427E-05	1.3396E-04	1.0104E-04
CO2	1.3061E-05	1.0000E-07	1.2167E-08
C2	1.0536E-04	7.9663E-05	2.9012E-05

P1 = 5.00E+01 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6405E+02	1.5533E+04	1.9978E+04
T	2.2651E+01	3.5392E+01	4.1005E+01
RHO	1.8355E+01	1.4333E+02	1.5154E+02
H	-2.3026E+00	-5.2147E+00	-6.0791E+00
A	6.7710E+00	1.0309E+01	1.1300E+01
S	2.2061E+00	2.4723E+00	2.5528E+00
Z	2.3187E+00	3.0620E+00	3.2151E+00
GAME	8.7292E-01	9.8059E-01	9.6849E-01
U	2.6589E+01	3.4099E+00	3.6630E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4913E-03	2.9485E-02	6.8840E-02
O	5.6733E-01	6.4068E-01	6.0810E-01
O+	7.1460E-05	3.7155E-03	1.2067E-02
O++	5.2145E-24	5.3574E-15	1.7147E-12
O-	1.3037E-06	9.9355E-05	9.1868E-05
O2	1.1860E-04	8.8257E-05	4.5064E-05
O2+	4.1540E-07	4.5916E-06	6.9569E-06
O2-	3.6333E-10	1.6301E-08	1.5059E-08
C	1.3468E-01	2.9127E-01	2.5230E-01
C+	1.3362E-03	2.6035E-02	5.6771E-02
C++	6.5641E-16	3.9473E-10	1.5970E-08
C-	2.0432E-07	1.9683E-05	2.8306E-05
CO	2.9479E-01	8.7043E-03	1.5879E-03
CO+	8.4803E-05	1.5311E-04	1.1517E-04
CO2	1.5596E-05	2.9430E-07	2.8041E-08
C2	9.0795E-05	1.2667E-04	4.4488E-05

P1 = 5.00E+01 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0697E+03	1.7556E+04	2.2876E+04
T	2.3358E+01	3.9732E+01	4.5041E+01
RHO	1.8857E+01	1.3877E+02	1.5092E+02
H	-2.6600E+00	-5.8897E+00	-6.8902E+00
A	7.0465E+00	1.1085E+01	1.2044E+01
S	2.2703E+00	2.5436E+00	2.6263E+00
Z	2.4286E+00	3.1841E+00	3.3653E+00
GAME	8.7528E-01	9.7122E-01	9.5701E-01
U	2.8032E+01	3.8141E+00	4.0018E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.1998E-03	6.0251E-02	1.0936E-01
O	5.8614E-01	6.1606E-01	5.6821E-01
O+	9.8410E-05	9.6779E-03	2.5284E-02
O++	2.8320E-23	5.7570E-13	4.7331E-11
O-	1.8878E-06	8.1391E-05	1.0729E-04
O2	1.0645E-04	4.7997E-05	2.8221E-05
O2+	4.5539E-07	6.1517E-06	8.5748E-06
O2-	4.7135E-10	1.3737E-08	1.2484E-08
C	1.7227E-01	2.6104E-01	2.1222E-01
C+	2.0098E-03	5.0556E-02	8.4111E-02
C++	2.2764E-15	8.1658E-09	1.2993E-07
C-	3.6966E-07	2.5535E-05	2.9905E-05
CO	2.3695E-01	2.0839E-03	5.3407E-04
CO+	9.3456E-05	1.1779E-04	8.9676E-05
CO2	1.0867E-05	3.9024E-08	6.1001E-09
C2	1.1842E-04	9.1480E-05	1.9947E-05

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad U_1 = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1246E+03	1.8611E+04	2.4365E+04
T	2.3716E+01	4.1668E+01	4.6820E+01
RHO	1.9076E+01	1.3749E+02	1.5113E+02
H	-2.8456E+00	-6.2404E+00	-7.3073E+00
A	7.1905E+00	1.1425E+01	1.2399E+01
S	2.3030E+00	2.5777E+00	2.6617E+00
Z	2.4857E+00	3.2485E+00	3.4435E+00
GAME	8.7705E-01	9.6440E-01	9.5357E-01
U	2.8751E+01	3.9945E+00	4.1529E+00

SPECIES	MOLE FRACTIONS		
E-	2.6336E-03	7.8003E-02	1.2939E-01
O	5.9515E-01	5.9976E-01	5.4672E-01
O+	1.1588E-04	1.4444E-02	3.3481E-02
O++	6.7825E-23	3.4113E-12	1.7042E-10
O-	2.2358E-06	8.9633E-05	1.1176E-04
O2	1.0088E-04	3.7592E-05	2.3196E-05
O2+	4.7971E-07	6.8797E-06	9.2342E-06
O2-	5.2907E-10	1.2555E-08	1.1352E-08
C	1.9032E-01	2.4275E-01	1.9383E-01
C+	2.4230E-03	6.3564E-02	9.5944E-02
C++	4.2022E-15	2.5442E-08	2.8814E-07
C-	4.7826E-07	2.6976E-05	2.9567E-05
CO	2.0902E-01	1.1779E-03	3.4282E-04
CO+	9.6893E-05	1.0441E-04	7.9692E-05
CO2	8.9318E-06	1.7511E-08	3.2778E-09
C2	1.2948E-04	3.4590E-05	1.4008E-05

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad U_1 = 8.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2381E+03	2.0777E+04	2.7389E+04
T	2.4470E+01	4.5117E+01	5.0062E+01
RHO	1.9434E+01	1.3601E+02	1.5177E+02
H	-3.2303E+00	-6.9676E+00	-8.1663E+00
A	7.4961E+00	1.2080E+01	1.3089E+01
S	2.3693E+00	2.6443E+00	2.7311E+00
Z	2.6035E+00	3.3859E+00	3.6047E+00
GAME	8.8203E-01	9.5521E-01	9.4934E-01
U	3.0185E+01	4.3204E+00	4.4324E+00

SPECIES	MOLE FRACTIONS		
E-	3.7336E-03	1.1470E-01	1.6814E-01
O	6.1222E-01	5.6303E-01	5.0192E-01
O+	1.6361E-04	2.6946E-02	5.2513E-02
O++	3.8201E-22	5.5956E-11	1.3859E-09
O-	3.0754E-06	1.0061E-04	1.1564E-04
O2	8.9705E-05	2.4963E-05	1.6263E-05
O2+	5.3783E-07	8.1403E-06	1.0217E-05
O2-	6.4895E-10	1.0460E-08	9.2910E-09
C	2.2454E-01	2.0682E-01	1.6133E-01
C+	3.4715E-03	8.7791E-02	1.1569E-01
C++	1.4137E-14	1.4812E-07	1.0450E-06
C-	7.6121E-07	2.7580E-05	2.7625E-05
CO	1.5553E-01	4.6057E-04	1.5933E-04
CO+	1.0181E-04	8.3215E-05	6.3161E-05
CO2	5.7330E-06	4.6917E-09	1.1144E-09
C2	1.4373E-04	1.7028E-05	7.3279E-06

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad U_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1807E+03	1.9688E+04	2.5873E+04
T	2.4084E+01	4.3449E+01	4.8486E+01
RHO	1.9270E+01	1.3666E+02	1.5145E+02
H	-3.0357E+00	-6.5998E+00	-7.7326E+00
A	7.3399E+00	1.1755E+01	1.2747E+01
S	2.3360E+00	2.6111E+00	2.6966E+00
Z	2.5440E+00	3.3157E+00	3.5234E+00
GAME	8.7927E-01	9.5916E-01	9.5110E-01
U	2.9469E+01	4.1610E+00	4.2958E+00

SPECIES	MOLE FRACTIONS		
E-	3.1378E-03	9.6216E-02	1.4901E-01
O	6.0386E-01	5.8201E-01	5.2456E-01
O+	1.3715E-04	2.0197E-02	4.2595E-02
O++	1.6090E-22	1.5273E-11	5.1808E-10
O-	2.6288E-06	9.5977E-05	1.1447E-04
O2	9.5364E-05	3.0346E-05	1.9337E-05
O2+	5.0708E-07	7.5451E-06	9.7839E-06
O2-	5.8855E-10	1.1477E-08	1.0293E-08
C	2.0777E-01	2.2454E-01	1.7686E-01
C+	2.9037E-03	7.6042E-02	1.0648E-01
C++	7.6993E-15	6.5651E-08	5.7227E-07
C-	6.0777E-07	2.7602E-05	2.8758E-05
CO	1.8185E-01	7.1778E-04	2.2996E-04
CO+	9.9696E-05	9.3112E-05	7.0937E-05
CO2	7.2313E-06	8.7429E-09	1.8709E-09
C2	1.3808E-04	2.4013E-05	1.0051E-05

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad U_1 = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2968E+03	2.1875E+04	2.8901E+04
T	2.4884E+01	4.6652E+01	5.1565E+01
RHO	1.9563E+01	1.3565E+02	1.5200E+02
H	-3.4295E+00	-7.3440E+00	-8.6084E+00
A	7.6615E+00	1.2392E+01	1.3427E+01
S	2.4028E+00	2.6765E+00	2.7653E+00
Z	2.6638E+00	3.4566E+00	3.6873E+00
GAME	8.8554E-01	9.5234E-01	9.4813E-01
U	3.0898E+01	4.4625E+00	4.5640E+00

SPECIES	MOLE FRACTIONS		
E-	4.4554E-03	1.3264E-01	1.8673E-01
O	6.2017E-01	5.4366E-01	4.7895E-01
O+	1.9761E-04	3.4398E-02	6.3113E-02
O++	9.5410E-22	1.6995E-10	3.3383E-09
O-	3.5878E-06	1.0373E-04	1.1546E-04
O2	8.3713E-05	2.0938E-05	1.3749E-05
O2+	5.7250E-07	8.6502E-06	1.0528E-05
O2-	7.0904E-10	9.5452E-09	8.3394E-09
C	2.4053E-01	1.9045E-01	1.4719E-01
C+	4.1586E-03	9.8292E-02	1.2368E-01
C++	2.6686E-14	2.9545E-07	1.7854E-06
C-	9.4328E-07	2.7116E-05	2.6275E-05
CO	1.3015E-01	3.1124E-04	1.1323E-04
CO+	1.0315E-04	7.4717E-05	5.6198E-05
CO2	4.4145E-06	2.7071E-09	6.8626E-09
C2	1.4592E-04	1.2408E-05	5.4122E-06

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1 = 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3567E+03	2.2957E+04	3.0390E+04
T	2.5338E+01	4.8114E+01	5.3006E+01
RHC	1.9650E+01	1.3518E+02	1.5203E+02
H	-3.6332E+00	-7.7282E+00	-9.0589E+00
A	7.8393E+00	1.2703E+01	1.3761E+01
S	2.4366E+00	2.7088E+00	2.7994E+00
Z	2.7249E+00	3.5297E+00	3.7711E+00
GAME	8.9011E-01	9.5016E-01	9.4737E-01
U	3.1607E+01	4.6014E+00	4.6915E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.3567E-03	1.5050E-01	2.0476E-01
O	6.2763E-01	5.2349E-01	4.5577E-01
O+	2.4297E-04	4.2698E-02	7.4283E-02
O++	2.6087E-21	4.5924E-10	7.3922E-09
O-	4.1835E-06	1.0547E-04	1.1407E-04
O2	7.7227E-05	1.7689E-05	1.1651E-05
O2+	6.1205E-07	9.0729E-06	1.0714E-05
O2-	7.6697E-10	8.6582E-09	7.4338E-09
O2++	1.5558E-01	1.7500E-01	1.3434E-01
O2+-	5.0149E-03	1.0786E-01	1.3055E-01
C++	5.2895E-14	5.4561E-07	2.8920E-06
C-	1.1603E-06	2.6283E-05	2.4783E-05
CO	1.0584E-01	2.1623E-04	8.2029E-05
CO+	1.0356E-04	6.7014E-05	4.9929E-05
CO2	3.2682E-06	1.6204E-09	4.3278E-10
C2	1.4412E-04	9.1396E-06	4.0369E-06

P1 = 5.00E+01 N/SQ-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4177E+03	2.4010E+04	3.1820E+04
T	2.5850E+01	4.9479E+01	5.4382E+01
RHC	1.9685E+01	1.3470E+02	1.5177E+02
H	-3.8415E+00	-8.1202E+00	-9.5137E+00
A	8.0343E+00	1.3003E+01	1.4091E+01
S	2.4705E+00	2.7403E+00	2.8332E+00
Z	2.7862E+00	3.6026E+00	3.8554E+00
GAME	8.9626E-01	9.4857E-01	9.4701E-01
U	3.2313E+01	4.7320E+00	4.8024E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.5243E-03	1.6765E-01	2.2211E-01
O	6.3447E-01	5.0328E-01	4.3270E-01
O+	3.0627E-04	5.1500E-02	8.5805E-02
O++	7.8703E-21	1.1004E-09	1.5183E-08
O-	4.8882E-06	1.0603E-04	1.1161E-04
O2	7.0077E-05	1.5092E-05	9.8853E-06
O2+	6.5790E-07	9.3983E-06	1.0772E-05
O2-	8.2008E-10	7.8373E-09	6.5784E-09
C	2.6945E-01	1.6099E-01	1.2275E-01
C++	6.1208E-03	1.1621E-01	1.3637E-01
C+	1.1159E-13	9.3225E-07	4.4696E-06
C-	1.4211E-06	2.5234E-05	2.3214E-05
CO	8.2802E-02	1.5512E-04	6.0439E-05
CO+	1.0284E-04	6.0224E-05	4.4305E-05
CO2	2.2923E-06	1.0127E-09	2.7850E-10
C2	1.3777E-04	6.8545E-06	3.0400E-06

P1 = 5.00E+01 N/SQ-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4799E+03	2.4999E+04	3.3174E+04
T	2.6650E+01	5.0823E+01	5.5718E+01
RHC	1.9652E+01	1.3366E+02	1.5107E+02
H	-4.0542E+00	-8.5192E+00	-9.9796E+00
A	8.2548E+00	1.3311E+01	1.4421E+01
S	2.5044E+00	2.7753E+00	2.8674E+00
Z	2.8471E+00	3.6800E+00	3.9413E+00
GAME	9.0487E-01	9.4736E-01	9.4698E-01
U	3.3012E+01	4.8610E+00	4.9241E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.1144E-03	1.8510E-01	2.3904E-01
O	6.4046E-01	4.8150E-01	4.0947E-01
O+	4.0016E-04	6.1265E-02	9.7747E-02
O++	2.7477E-20	2.4935E-09	2.5545E-08
O-	5.7426E-06	1.0528E-04	1.0814E-04
O2	6.2050E-05	1.2814E-05	8.3587E-06
O2+	7.1241E-07	9.6181E-06	1.0703E-05
O2-	8.6429E-10	6.9945E-09	5.7581E-09
C	2.8173E-01	1.4752E-01	1.1214E-01
C+	7.6223E-03	1.2390E-01	1.4136E-01
C++	2.5877E-12	1.5367E-06	6.6840E-06
C-	1.7391E-06	2.3912E-05	2.1578E-05
CO	6.1370E-02	1.1190E-04	4.4906E-05
CO+	1.0070E-04	5.3753E-05	3.9163E-05
CO2	1.4893E-06	6.3535E-10	1.8064E-10
C2	1.2622E-04	5.1152E-06	2.2957E-06

P1 = 5.00E+01 N/SQ-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5420E+03	2.5887E+04	3.4384E+04
T	2.7182E+01	5.2079E+01	5.7002E+01
RHC	1.9525E+01	1.3231E+02	1.4975E+02
H	-4.2714E+00	-8.9244E+00	-1.0452E+01
A	8.5132E+00	1.3609E+01	1.4748E+01
S	2.5382E+00	2.8057E+00	2.9017E+00
Z	2.9067E+00	3.7570E+00	4.0281E+00
GAME	9.1727E-01	9.4654E-01	9.4725E-01
U	3.3704E+01	4.9822E+00	5.0420E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0420E-02	2.0176E-01	2.5542E-01
O	6.4515E-01	4.6071E-01	3.8641E-01
O+	5.5129E-04	7.1334E-02	1.0990E-01
O++	1.2566E-19	5.1622E-09	5.4500E-08
O-	6.8111E-06	1.0351E-04	1.0374E-04
O2	5.3171E-05	1.0926E-05	7.0398E-06
O2+	7.7948E-07	9.7243E-06	1.0507E-05
O2-	8.9336E-10	6.2052E-09	4.9799E-09
C	2.6175E-01	1.3540E-01	1.0247E-01
C+	9.7955E-03	1.3045E-01	1.4558E-01
C++	7.0003E-13	3.3932E-06	9.6841E-06
C-	2.1374E-06	2.2492E-05	1.9906E-05
CO	4.2111E-02	8.2514E-05	3.3632E-05
CO+	9.6770E-05	4.7585E-05	3.4491E-05
CO2	8.6672E-07	4.0987E-10	1.1800E-10
C2	1.0946E-04	3.8720E-06	1.7302E-06

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 9.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6068E+03	2.6615E+04	3.5376E+04
T	2.8110E+01	5.326E+01	5.8231E+01
RHC	1.9289E+01	1.5031E+02	1.4761E+02
H	-4.4930E+00	-9.3348E+00	-1.0928E+01
A	8.8225E+00	1.3902E+01	1.5071E+01
S	2.5716E+00	2.8385E+00	2.9364E+00
Z	2.9635E+00	3.8350E+00	4.1156E+00
GAME	9.3439E+01	9.4603E+01	9.4781E+01
U	3.4382E+01	5.0972E+00	5.1558E+00

SPECIES	MOLE FRACTIONS		
E-	1.4005E-02	2.1796E-01	2.7125E-01
O	6.4792E-01	4.3949E-01	3.6362E-01
C+	8.1553E-04	8.1784E-02	1.2215E-01
O++	7.2999E-19	1.0004E-08	9.5820E-08
C-	8.1841E-06	1.0066E-04	9.8467E-05
O2	4.3320E-05	9.2958E-06	5.8938E-06
O2+	8.6483E-07	9.7098E-06	1.0186E-05
O2-	8.9884E-10	5.4404E-09	4.2389E-09
C	2.9796E-01	1.2427E-01	9.3632E-02
C+	1.3109E-02	1.3624E-01	1.4915E-01
C++	2.2813E-12	3.5791E-06	1.3646E-05
C-	2.6281E-06	2.0960E-05	1.8213E-05
CO	2.5961E-02	6.1536E-05	2.5311E-05
CO+	9.0501E-05	4.2691E-05	3.0237E-05
CO2	4.3309E-07	2.6746E-10	7.7261E-11
C2	8.7772E-05	2.9401E-06	1.3186E-06

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 1.05E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8366E+03	2.8194E+04	3.7498E+04
T	3.2765E+01	5.7026E+01	6.2247E+01
RHO	1.7878E+01	1.2013E+02	1.3603E+02
H	-5.3030E+00	-1.0812E+01	-1.2642E+01
A	9.9201E+00	1.4903E+01	1.6198E+01
S	2.6826E+00	2.9551E+00	3.0601E+00
Z	3.1351E+00	4.1150E+00	4.4284E+00
GAME	9.5801E+01	9.4626E+01	9.5180E+01
U	3.6680E+01	5.4671E+00	5.5498E+00

SPECIES	MOLE FRACTIONS		
E-	4.4014E-02	2.7114E-01	3.2269E-01
C	6.3068E-01	3.6557E-01	2.8647E-01
C+	4.4699E-02	1.2029E-01	1.6504E-01
O++	1.4802E-15	6.9581E-08	5.3118E-07
C-	1.5025E-05	8.5242E-05	7.6260E-05
O2	1.6284E-05	5.1545E-06	2.9942E-06
O2+	1.3182E-06	8.8960E-06	8.3751E-06
O2-	7.2775E-10	3.1677E-09	2.1814E-09
C	2.7454E-01	9.1929E-02	6.7997E-02
C+	4.1503E-02	1.5089E-01	1.5764E-01
C++	3.3201E-10	1.1662E-05	3.9127E-05
C-	4.7104E-06	1.5508E-05	1.2623E-05
CO	2.6779E-03	2.3301E-05	9.4452E-06
CO+	5.9807E-05	2.7639E-05	1.8357E-05
CO2	1.7100E-08	6.3232E-11	1.7238E-11
C2	2.3761E-05	1.1439E-06	4.9602E-07

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 1.00E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6712E+03	2.7157E+04	3.6101E+04
T	2.9285E+01	5.4389E+01	5.9403E+01
RHO	1.8922E+01	1.2757E+02	1.4457E+02
H	-4.7189E+00	-9.7492E+00	-1.1409E+01
A	9.1733E+00	1.4189E+01	1.5391E+01
S	2.6044E+00	2.8717E+00	2.9715E+00
Z	3.0159E+00	3.9139E+00	4.2039E+00
GAME	9.5277E+01	9.4577E+01	9.4860E+01
U	3.5047E+01	5.2064E+00	5.2668E+00

SPECIES	MOLE FRACTIONS		
E-	1.9744E-02	2.3371E-01	2.8654E-01
O	6.4753E-01	4.1827E-01	3.4117E-01
C+	1.3078E-02	9.2516E-02	1.3441E-01
O++	6.1880E-18	1.8303E-08	1.6151E-07
C-	9.9366E-06	9.6842E-05	9.2448E-05
O2	3.3355E-05	7.8791E-06	4.8972E-06
O2+	9.7431E-07	9.5756E-06	9.7491E-06
O2-	8.7344E-10	4.7066E-09	3.5596E-09
C	2.9870E-01	1.1403E-01	8.5525E-02
C+	1.8367E-02	1.4125E-01	1.5216E-01
C++	9.3120E-12	5.1693E-06	1.8777E-05
C-	3.2254E-06	1.9355E-05	1.6517E-05
CO	1.4154E-02	4.6262E-05	1.9090E-05
CO+	8.2028E-05	2.7828E-05	2.6366E-05
CO2	1.8170E-07	1.7571E-10	5.0493E-11
C2	6.4090E-05	2.2367E-06	9.9827E-07

 $P_1 = 5.00E+01 \text{ N/SQ-M}, \quad US_1 = 1.10E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0108E+03	2.9724E+04	3.9572E+04
T	3.5809E+01	5.9702E+01	6.5264E+01
RHC	1.7218E+01	1.1519E+02	1.3016E+02
H	-5.9158E+00	-1.1933E+01	-1.3948E+01
A	1.0503E+01	1.5644E+01	1.7058E+01
S	2.7562E+00	3.0370E+00	3.1472E+00
Z	3.2613E+00	4.3221E+00	4.6583E+00
GAME	9.4461E+01	9.4845E+01	9.5713E+01
U	3.8339E+01	5.7393E+00	5.8444E+00

SPECIES	MOLE FRACTIONS		
E-	8.1066E-02	3.0604E-01	3.5611E-01
O	6.0152E-01	3.1362E-01	2.3392E-01
C+	1.0905E-02	1.4898E-01	1.9533E-01
O++	7.8140E-14	2.3071E-07	1.6317E-06
C-	1.8873E-05	7.3343E-05	6.0805E-05
O2	9.3463E-06	3.3412E-06	1.7615E-06
O2+	1.6494E-06	7.9846E-06	6.8804E-06
O2-	5.9300E-10	2.1005E-09	1.2788E-09
C	2.3954E-01	7.4125E-02	5.3801E-02
C+	7.0139E-02	1.5707E-01	1.6067E-01
C++	4.1957E-09	2.4201E-05	7.8810E-05
C-	5.4003E-06	1.2329E-05	9.4898E-06
CO	7.3662E-04	1.2068E-05	4.6364E-06
CO+	4.5006E-05	2.0022E-05	1.2485E-05
CO2	2.8205E-09	2.3557E-11	5.7363E-12
C2	9.8527E-06	5.9938E-07	2.4573E-07

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1946E+03	3.1709E+04	4.2302E+04
T	3.8347E+01	6.2460E+01	6.8560E+01
RHO	1.6842E+01	1.1196E+02	1.2617E+02
H	-6.5577E+00	-1.3115E+01	-1.5336E+01
A	1.1051E+01	1.6423E+01	1.7988E+01
S	2.8272E+00	3.1176E+00	3.2325E+00
Z	3.3980E+00	4.5341E+00	4.8904E+00
GAME	9.3730E-01	9.5236E-01	9.6502E-01
U	4.0026E+01	6.0299E+00	6.1721E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1759E-01	3.3847E-01	3.8666E-01
O	5.6762E-01	2.6328E-01	1.8454E-01
O+	2.0607E-02	1.7772E-01	2.2435E-01
O++	1.3461E-12	6.9973E-07	4.8598E-06
C-	2.1171E-05	6.1380E-05	4.6337E-05
O2	6.1774E-06	2.1110E-06	9.7490E-07
O2+	1.9348E-06	6.8990E-06	5.3528E-06
O2+	4.8709E-09	1.3488E-09	6.9868E-10
C	1.9686E-01	5.9668E-02	4.2194E-02
C+	9.6973E-02	1.6071E-01	1.6202E-01
C++	2.4897E-08	4.7815E-05	1.5788E-04
C-	5.4150E-06	9.6834E-06	6.9467E-06
CO	2.7350E-04	6.2876E-06	2.2022E-06
CO+	3.5005E-05	1.4275E-05	8.1932E-06
CC2	7.2140E-10	8.7662E-12	1.8003E-12
C2	4.6475E-06	3.1639E-07	1.1877E-07

P1 = 5.00E+01 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3874E+03	3.3976E+04	4.5470E+04
T	4.0577E+01	6.5361E+01	7.2358E+01
RHC	1.6611E+01	1.0945E+02	1.2255E+02
H	-7.2283E+00	-1.4352E+01	-1.6804E+01
A	1.1583E+01	1.7246E+01	1.9035E+01
S	2.8968E+00	3.1973E+00	3.3187E+00
Z	3.5421E+00	4.7493E+00	5.1276E+00
GAME	9.2341E-01	9.5817E-01	9.7653E-01
U	4.1730E+01	6.3423E+00	6.5346E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5334E-01	3.6844E-01	4.1503E-01
O	5.3085E-01	2.1532E-01	1.3794E-01
O+	3.3596E-02	2.0571E-01	2.5204E-01
O++	1.2329E-11	2.0015E-06	1.4944E-05
C-	2.2277E-05	4.9447E-05	3.2660E-05
O2	4.3353E-06	1.2744E-06	4.7927E-07
O2+	2.1681E-06	5.6886E-06	3.8233E-06
O2-	3.9965E-10	8.1784E-10	3.3213E-10
C	1.6230E-01	4.7765E-02	3.2269E-02
C+	1.1974E-01	1.6259E-01	1.6233E-01
C++	9.6631E-08	9.2118E-05	3.2975E-04
C-	5.0530E-06	7.4358E-06	4.7928E-06
CO	1.1973E-04	3.2204E-06	9.5136E-07
CO+	2.7557E-05	9.9061E-06	5.0002E-06
CC2	2.3373E-10	3.1295E-12	4.7825E-13
C2	2.3557E-06	1.6478E-07	5.2758E-08

P1 = 5.00E+01 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5889E+03	3.6437E+04	4.9008E+04
T	4.2609E+01	6.8488E+01	7.6862E+01
RHO	1.6459E+01	1.0714E+02	1.1898E+02
H	-7.9277E+00	-1.5644E+01	-1.8367E+01
A	1.2102E+01	1.8128E+01	2.0221E+01
S	2.9655E+00	3.2761E+00	3.4037E+00
Z	3.6916E+00	4.9655E+00	5.3592E+00
GAME	9.3116E-01	9.6631E-01	9.9268E-01
U	4.3443E+01	6.6830E+00	6.9697E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.8755E-01	3.9594E-01	4.4030E-01
O	4.9192E-01	1.7040E-01	9.6264E-02
O+	4.9733E-02	2.3231E-01	2.7685E-01
O++	7.5874E-11	5.5755E-06	4.8779E-05
C-	2.2480E-05	3.7889E-05	2.0746E-05
O2	3.1415E-06	7.1885E-07	2.0085E-07
O2+	2.3380E-06	4.4291E-06	2.4434E-06
O2-	3.2535E-10	4.5597E-10	1.3068E-10
C	1.3286E-01	3.7821E-02	2.3870E-02
C+	1.3782E-01	1.6329E-01	1.6190E-01
C++	2.8784E-07	1.7726E-04	7.3650E-04
C-	4.5212E-06	5.5181E-06	3.0479E-06
CO	5.7904E-05	1.5810E-06	3.5975E-07
CO+	2.1740E-05	6.6038E-06	2.7677E-06
CO2	8.7022E-11	1.0339E-12	1.0080E-13
C2	1.2500E-06	8.2745E-08	2.0788E-08

P1 = 5.00E+01 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7989E+03	3.9037E+04	5.2869E+04
T	4.4506E+01	7.1970E+01	8.2540E+01
RHO	1.6354E+01	1.0473E+02	1.1484E+02
H	-8.6557E+00	-1.6988E+01	-2.0026E+01
A	1.2615E+01	1.9088E+01	2.1593E+01
S	3.0338E+00	3.3540E+00	3.4884E+00
Z	3.8454E+00	5.1793E+00	5.5776E+00
GAME	9.2993E-01	9.7750E-01	1.0128E+00
U	4.5162E+01	7.0622E+00	7.4800E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2001E-01	4.2086E-01	4.6221E-01
O	4.5141E-01	1.2918E-01	6.0871E-02
O+	6.8618E-02	2.5692E-01	2.9751E-01
O++	3.5379E-10	1.5642E-05	1.8054E-04
C-	2.1996E-05	2.7170E-05	1.1299E-05
O2	2.3080E-06	3.6812E-07	6.6082E-08
O2+	2.4335E-06	3.2067E-06	1.3289E-06
O2-	2.6163E-10	2.2604E-10	3.8622E-11
C	1.0849E-01	2.9403E-02	1.6708E-02
C+	1.5139E-01	1.6323E-01	1.6065E-01
C++	7.1624E-07	3.4954E-04	1.8526E-03
C-	3.9442E-06	3.8978E-06	1.7039E-06
CO	2.9913E-05	7.2160E-07	1.0961E-07
CO+	1.7112E-05	4.1546E-06	1.3149E-06
CO2	3.5366E-11	2.9940E-13	1.4745E-14
C2	6.8649E-07	3.8952E-08	6.6986E-09

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/SQ-M, US1= 1.35E+04 M/SEC

P1 = 5.00E+01 N/SQ-M, US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0174E+03	4.1730E+04	5.7036E+04
T	4.6308E+01	7.5998E+01	8.9497E+01
RHC	1.6278E+01	1.0196E+02	1.1059E+02
H	-9.4124E+00	-1.8382E+01	-2.1790E+01
A	1.3126E+01	2.0155E+01	2.2972E+01
S	3.1018E+00	3.4304E+00	3.5691E+00
Z	4.0029E+00	5.3852E+00	5.7625E+00
GAME	9.2955E-01	9.9253E-01	1.0233E+00
U	4.6884E+01	7.4949E+00	8.0779E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2441E+03	4.4475E+04	6.1404E+04
T	4.8040E+01	8.0828E+01	9.7059E+01
RHO	1.6220E+01	9.8698E+01	1.0688E+02
H	-1.0198E+01	-1.9824E+01	-2.3624E+01
A	1.3638E+01	2.1340E+01	2.4056E+01
S	3.1694E+00	3.5048E+00	3.6468E+00
Z	4.1633E+00	5.5750E+00	5.9190E+00
GAME	9.2997E-01	1.0106E+00	1.0073E+00
U	4.8608E+01	7.9984E+00	8.6750E+00

SPECIES	MOLE FRACTIONS		
E-	2.5068E-01	4.4300E-01	4.7947E-01
O	4.0994E-01	9.2496E-02	3.5591E-02
C+	8.9643E-02	2.7882E-01	3.1076E-01
O++	1.3472E-09	4.5846E-05	7.1425E-04
C-	2.0988E-05	1.7826E-05	5.3756E-06
O2	1.6956E-06	1.6472E-07	1.7715E-08
O2+	2.4494E-06	2.1117E-06	6.2403E-07
O2-	2.0707E-10	9.5261E-11	8.9207E-12
C	8.8633E-02	2.2226E-02	1.1177E-02
C+	1.6104E-01	1.6265E-01	1.5727E-01
C++	1.5676E-06	7.2680E-04	5.0091E-03
C-	3.3869E-06	2.5667E-06	8.4601E-07
CC	1.6173E-05	2.9445E-07	2.7868E-08
CO+	1.3410E-05	2.4072E-06	5.4426E-07
CO2	1.5202E-11	7.1419E-14	1.5905E-15
C2	3.8700E-07	1.6569E-08	1.8056E-09

SPECIES	MOLE FRACTIONS		
E-	2.7954E-01	4.6197E-01	4.9323E-01
O	3.6829E-01	6.1655E-02	2.0992E-02
O+	1.1205E-01	2.9693E-01	3.1439E-01
O++	4.3825E-09	1.4490E-04	2.5133E-03
O-	1.9591E-05	1.0435E-05	2.5240E-06
C2	1.2459E-06	6.1808E-08	4.7358E-09
O2+	2.3881E-06	1.2334E-06	2.8647E-07
O2-	1.6088E-10	3.2510E-11	2.0358E-12
C	7.2575E-02	1.6166E-02	7.4398E-03
C+	1.6749E-01	1.6149E-01	1.4904E-01
C++	3.1194E-06	1.6342E-03	1.2391E-02
C-	2.8783E-06	1.5381E-06	4.0866E-07
CO	9.0423E-06	1.0307E-07	7.0912E-09
CO+	1.0454E-05	1.2494E-06	2.1847E-07
CO2	6.7897E-12	1.3100E-14	1.7327E-16
C2	2.2416E-07	6.1137E-09	4.7304E-10

P1 = 5.00E+01 N/SQ-M, US1= 1.45E+04 M/SEC

P1 = 5.00E+01 N/SQ-M, US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4791E+03	4.7216E+04	6.5837E+04
T	4.9746E+01	8.6637E+01	1.0380E+02
RHC	1.6160E+01	9.4953E+01	1.0457E+02
H	-1.1011E+01	-2.1312E+01	-2.5499E+01
A	1.4159E+01	2.2556E+01	2.4898E+01
S	3.2375E+00	3.5767E+00	3.7203E+00
Z	4.3279E+00	5.7355E+00	6.0651E+00
GAME	9.2120E-01	1.0232E+00	9.8462E-01
U	5.0333E+01	8.5777E+00	9.1996E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.7222E+03	4.9995E+04	7.0268E+04
T	5.1438E+01	9.3031E+01	1.0945E+02
RHC	1.6099E+01	9.1439E+01	1.0335E+02
H	-1.185-E+01	-2.2849E+01	-2.7389E+01
A	1.4689E+01	2.3561E+01	2.5681E+01
S	3.3053E+00	3.6457E+00	3.7900E+00
Z	4.4944E+00	5.8771E+00	6.2119E+00
GAME	9.3324E-01	1.0153E+00	9.6598E-01
U	5.2056E+01	9.1808E+00	9.6044E+00

SPECIES	MOLE FRACTIONS		
E-	3.0644E-01	4.7739E-01	5.0544E-01
O	3.2665E-01	3.8349E-02	1.3869E-02
C+	1.3542E-01	3.0961E-01	3.0947E-01
O++	1.2786E-08	4.8958E-04	6.4172E-03
O-	1.7882E-05	5.4318E-06	1.3815E-06
C2	8.9965E-07	1.9387E-08	1.6510E-09
O2+	2.2559E-06	6.3630E-07	1.5054E-07
O2-	1.2173E-10	8.9355E-12	6.2949E-13
C	5.9425E-02	1.1289E-02	5.2384E-03
C+	1.7151E-01	1.5893E-01	1.3600E-01
C++	5.8276E-06	3.9280E-03	2.3571E-02
C-	2.4103E-06	8.3181E-07	2.2165E-07
CO	5.1329E-06	3.0763E-08	2.3221E-09
CO+	8.0684E-06	5.7607E-07	1.0058E-07
CO2	7.0636E-12	1.8258E-15	2.9086E-17
C2	1.3111E-07	1.9311E-09	1.5230E-10

SPECIES	MOLE FRACTIONS		
E-	3.3268E-01	4.8562E-01	5.1713E-01
O	2.8592E-01	2.3627E-02	1.0162E-02
O+	1.5900E-01	3.1511E-01	2.9934E-01
O++	3.4160E-08	1.5588E-03	1.2463E-02
O-	1.5966E-05	2.7223E-06	8.7344E-07
C2	6.3778E-07	5.8597E-09	7.4215E-10
O2+	2.0644E-06	3.1410E-07	9.0856E-08
O2-	8.4502E-11	2.3241E-12	2.6120E-13
C	4.8683E-02	7.8044E-03	3.9012E-03
C+	1.7367E-01	1.5315E-01	1.2115E-01
C++	1.0374E-05	9.1228E-03	3.8588E-02
C-	2.0138E-06	4.3262E-07	1.3603E-07
CO	2.9409E-06	8.8880E-09	9.7009E-10
CO+	6.1634E-06	2.5447E-07	5.3408E-08
CO2	1.3834E-12	2.4444E-16	7.3775E-18
C2	7.7364E-08	5.8050E-10	6.0707E-11

TABLE I.- Continued

$$p_1 = 50 \text{ N/m}^2$$

P1 = 5.00E+01 N/50-M, US1 = 1.55E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9732E+03	5.2868E+04	7.4700E+04
T	5.3151E+01	9.9242E+01	1.1437E+02
RHO	1.6027E+01	8.8705E+01	1.0265E+02
H	-1.2724E+01	-2.4438E+01	-2.9315E+01
A	1.5235E+01	2.4337E+01	2.6454E+01
S	3.3731E+00	3.7126E+00	3.8579E+00
Z	4.6642E+00	6.0055E+00	6.3629E+00
GAME	9.3621E-01	9.9375E-01	9.6159E-01
U	5.3775E+01	9.7214E+00	9.9497E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.5672E-01	5.0053E-01	5.2859E-01
O	2.4636E-01	1.5475E-02	7.9060E-03
C+	1.8240E-01	2.1347E-01	2.8596E-01
O++	8.5927E-08	4.0847E-03	2.0455E-02
C-	1.3907E-05	1.4819E-06	6.1279E-07
O2SE	4.4002E-07	2.0131E-09	3.8789E-10
O2+SE	1.8329E-06	1.6513E-07	5.6417E-08
O2-SE	6.3406E-11	7.0422E-13	1.2915E-13
C-SE	5.9788E-02	5.5234E-03	3.0035E-03
C-SE	1.7449E-01	1.4292E-01	1.0646E-01
C-SE	1.7913E-05	1.7985E-02	4.7632E-02
C-SE	1.6547E-06	2.3617E-07	9.0129E-08
CO	1.6785E-06	2.9121E-09	4.6920E-10
CC+	4.6273E-06	1.1890E-07	3.0871E-08
CO2	6.1616E-17	4.0560E-17	2.3970E-18
C2	4.5563E-08	1.9086E-10	2.7619E-11

P1 = 5.00E+01 N/50-M, US1 = 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2321E+03	5.5853E+04	7.9112E+04
T	5.4918E+01	1.0458E+02	1.1882E+02
RHO	1.5937E+01	8.7095E+01	1.0215E+02
H	-1.3624E+01	-2.6085E+01	-3.1298E+01
A	1.5801E+01	2.5024E+01	2.7222E+01
S	3.4405E+00	3.7764E+00	3.9248E+00
Z	4.8354E+00	6.1323E+00	6.5182E+00
GAME	9.4021E-01	9.7645E-01	9.5686E-01
U	5.5489E+01	1.0160E+01	1.0264E+01

SPECIES ----- MOLE FRACTIONS -----

E-	3.7966E-01	5.1086E-01	5.3982E-01
O	2.0831E-01	1.1183E-02	6.3578E-03
C+	2.0529E-01	3.0666E-01	2.7032E-01
O++	2.0818E-07	8.2955E-03	3.0157E-02
C-	1.1772E-05	8.2535E-07	4.4960E-07
O2+	2.9269E-07	8.8063E-10	2.085E-10
O2-	1.5695E-06	9.8877E-08	4.0544E-08
C-	4.2865E-11	2.8120E-13	7.0563E-14
C	3.2340E-02	4.1374E-03	2.3579E-03
C+	1.7434E-01	1.3012E-01	9.2795E-02
CC+	3.0566E-05	2.8745E-02	5.8196E-02
C-	1.3367E-06	1.4432E-07	6.2554E-08
CO	9.4244E-07	1.1975E-09	2.4733E-10
CO+	3.4179E-06	6.3425E-08	1.8747E-08
CO2	2.6400E-13	9.9019E-18	9.0017E-19
C2	2.6504E-08	7.6254E-11	1.3625E-11

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0726E+00
RHC	6.1025E+00	1.5532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9264E+00
S	1.0654E+00	1.0816E+00	1.0995E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1121E-01
U	3.0950E+00	9.6609E-01	8.7895E-01

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.5208E-50	4.5375E-41	1.6039E-32
O	7.2819E-14	4.6565E-11	2.7107E-09
C+	4.4918E-37	2.9921E-33	2.0902E-30
O++	0.	0.	0.
C-	2.0916E-57	6.3483E-47	1.3137E-37
C2	4.3952E-34	4.3999E-04	4.4221E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0357E-51	4.9646E-42	3.7486E-34
C	7.4628E-52	6.5537E-43	6.5278E-35
C+	4.1170E-62	9.3486E-54	2.4715E-46
C++	0.	0.	0.
C-	1.0728E-96	9.7168E-80	6.5253E-64
CO	5.1097E-11	4.9189E-08	4.5927E-06
CO+	7.4528E-36	1.6329E-31	3.5289E-28
CC2	9.9956E-01	9.9956E-01	9.9955E-01
C2	4.5772E-76	3.9769E-63	3.0818E-51

P1 = 1.00E+02 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1271E+01	1.9469E+02	2.9062E+02
T	3.8892E+00	5.6458E+00	6.3893E+00
RHC	8.0415E+00	3.4407E+01	4.5178E+01
H	8.8932E-01	8.0740E-01	7.6583E-01
A	1.8834E+00	2.2483E+00	2.3761E+00
S	1.1251E+00	1.1542E+00	1.1746E+00
Z	1.0000E+00	1.0016E+00	1.0070E+00
GAME	9.1251E-01	8.9324E-01	8.7759E-01
U	4.5382E+00	1.0613E+00	9.7989E-01

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.4217E-33	9.1152E-19	7.6322E-17
O	1.6044E-09	4.0473E-06	5.2873E-05
O+	6.7415E-31	1.5699E-25	1.8988E-22
O++	0.	0.	5.8774E-91
C-	5.1266E-39	5.7223E-22	1.3165E-19
O2	4.4112E-04	2.0477E-03	7.2902E-03
O2+	1.7597E-18	8.3397E-19	7.8412E-17
O2-	1.1892E-35	1.0778E-20	4.6709E-19
C	6.7488E-36	1.0268E-22	6.0662E-20
C+	3.0008E-47	1.0049E-34	1.9520E-30
C++	0.	1.0762E-83	6.1784E-74
C-	7.5805E-66	1.9091E-38	9.7689E-34
CO	2.4074E-06	3.2210E-03	1.3760E-02
CO+	9.0169E-29	1.3172E-23	6.7707E-21
CC2	9.9556E-01	9.9473E-01	9.7890E-01
C2	1.0721E-52	2.6901E-33	3.0321E-29

P1 = 1.00E+02 N/SQ-M, US1= 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2170E+02	1.9017E+02
T	3.1957E+00	4.5026E+00	5.2443E+00
RHC	7.1505E+00	2.7032E+01	3.6240E+01
H	9.1901E-01	8.6219E-01	8.2796E-01
A	1.7137E+00	2.0223E+00	2.1737E+00
S	1.0952E+00	1.1180E+00	1.1275E+00
Z	1.0000E+00	1.0000E+00	1.0005E+00
GAME	9.1904E-01	9.0827E-01	9.0046E-01
U	3.8201E+00	1.0099E+00	9.3648E-01

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.2352E-40	6.3701E-25	4.5924E-21
O	6.7479E-12	1.5293E-08	7.9862E-07
C+	1.5448E-33	3.2802E-29	6.4606E-27
O++	0.	0.	0.
C-	1.1121E-46	2.4552E-29	5.2645E-25
C2	4.3951E-04	4.6080E-04	9.6326E-04
C2+	1.7597E-18	1.7596E-18	1.7634E-18
O2-	4.0062E-42	3.7710E-27	3.6167E-23
C	1.6479E-42	3.1970E-28	3.4805E-25
C+	2.1570E-53	2.3315E-40	8.5058E-38
C++	0.	0.	3.7718E-94
C-	7.8410E-79	4.5376E-50	1.1090E-43
CO	1.1766E-08	4.1799E-05	1.0479E-03
CO+	1.0017E-31	1.2938E-26	1.8309E-24
CC2	9.9556E-01	9.9550E-01	9.7999E-01
C2	1.7879E-62	2.7780E-41	4.6555E-37

P1 = 1.00E+02 N/SQ-M, US1= 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1027E+01	2.8893E+02	4.1270E+02
T	4.6590E+00	6.6925E+00	7.2899E+00
RHC	8.8057E+00	4.2665E+01	5.5170E+01
H	8.5507E-01	7.4460E-01	6.9597E-01
A	2.0550E+00	2.4277E+00	2.5377E+00
S	1.1586E+00	1.1901E+00	1.2117E+00
Z	1.0001E+00	1.0119E+00	1.0262E+00
GAME	9.0632E-01	8.7032E-01	8.6086E-01
U	5.2454E+00	1.0850E+00	9.9414E-01

SPECIES	-----	MOLE FRACTIONS	-----
E-	2.3324E-23	1.8028E-15	3.6864E-14
O	6.5246E-08	1.4570E-04	6.1704E-04
C+	2.2939E-28	1.3416E-21	6.5789E-20
O++	0.	1.1965E-90	6.6308E-81
C-	7.8501E-28	2.2155E-18	9.3491E-17
C2	5.3625E-04	1.2008E-02	2.5324E-02
O2+	1.7595E-18	1.8372E-15	3.7885E-14
O2-	5.5272E-26	3.0557E-17	9.2999E-16
C	3.7887E-27	5.8309E-19	2.7737E-17
C+	1.3775E-39	7.0949E-30	2.0708E-27
C++	0.	1.3257E-73	9.5286E-66
C-	8.9279E-48	3.2559E-33	2.9079E-30
CO	1.9284E-04	2.3292E-02	5.0409E-02
CO+	8.1375E-20	8.3445E-20	3.5121E-18
CC2	9.9927E-01	9.6455E-01	9.2365E-01
C2	6.8446E-40	1.2466E-28	4.5681E-27

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2144E+01	4.3895E+02	5.6110E+02
T	5.4658E+00	7.5155E+00	8.0023E+00
RHC	9.5219E+00	5.2549E+01	6.6203E+01
H	8.1623E-01	6.7229E-01	6.1754E-01
A	2.2111E+00	2.5825E+00	2.6892E+00
S	1.1874E+00	1.2273E+00	1.2502E+00
Z	1.0016E+00	1.0355E+00	1.0574E+00
GAME	8.9290E-01	9.5764E-01	8.5465E-01
U	5.5020E+00	1.0826E+00	9.9814E-01

SPECIES ----- MOLE FRACTIONS -----

E-	3.7415E-19	1.2413E-13	9.5809E-13
C	4.7578E-06	1.0905E-03	2.6579E-03
C++	4.0248E-26	5.9540E-19	1.2836E-17
C+	C+	1.4104E-81	1.1479E-75
C-	5.9174E-23	4.5263E-16	6.4524E-15
C2	2.0501E-03	3.3603E-02	5.2077E-02
O2+	4.7402E-12	1.2787E-13	9.9837E-13
O2-	1.1714E-22	3.3057E-15	3.4137E-14
C1	1.0917E-23	1.7608E-16	2.0779E-15
C2+	1.9574E-36	2.5866E-26	2.0317E-24
C++	7.3316E-86	4.4380E-66	2.4219E-61
C-	4.3307E-41	2.3657E-29	2.9842E-27
CO	3.2206E-03	6.7451E-02	1.0598E-01
CC+	6.3108E-2+	1.9522E-17	2.9890E-16
CC2	9.9472E-01	8.9785E-01	8.3929E-01
C2	2.3355E-35	2.9821E-25	1.8381E-23

P1 = 1.00E+02 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8821E+01	7.6625E+02	9.9327E+02
T	6.8046E+00	8.7907E+00	9.2013E+00
RHC	1.1335E+01	7.8210E+01	9.3957E+01
H	7.2459E-01	4.9874E-01	4.3061E-01
A	2.4450E+00	2.8924E+00	3.0070E+00
S	1.2445E+00	1.3063E+00	1.3330E+00
Z	1.0221E+00	1.1146E+00	1.1489E+00
GAME	8.5959E-01	8.5382E-01	8.5530E-01
U	7.4225E+00	1.0777E+00	1.0177E+00

SPECIES ----- MOLE FRACTIONS -----

E-	6.3149E-15	1.5342E-11	5.3763E-11
C	4.7688E-04	9.6386E-03	1.5755E-02
O+	2.5704E-21	5.0358E-16	4.9572E-15
O++	2.0154E-85	6.8899E-66	1.3991E-65
O-	3.3200E-18	1.9551E-13	1.0304E-12
C2	2.1545E-02	9.3570E-02	1.1425E-01
O2+	6.3624E-15	1.6229E-11	5.7547E-11
O2-	4.2623E-17	7.0168E-13	2.8181E-12
C	5.5458E-19	1.1195E-13	7.8087E-13
C+	3.1240E-28	4.3234E-22	7.0016E-21
C++	3.0535E-69	1.7807E-53	9.7454E-54
C-	8.7254E-32	1.0800E-24	1.9679E-23
CO	4.2706E-02	1.9599E-01	2.4350E-01
CC+	1.4374E-15	9.7286E-15	6.0295E-14
CC2	5.3577E-01	7.0080E-01	6.2649E-01
C2	1.2342E-27	2.7802E-22	3.9802E-20

P1 = 1.00E+02 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4720E+01	5.0465E+02	7.5002E+02
T	6.2040E+00	8.1877E+00	8.6213E+00
RHC	1.0350E+01	6.4437E+01	7.9175E+01
H	7.7274E-01	5.9039E-01	5.2931E-01
A	2.3375E+00	2.7352E+00	2.8437E+00
S	1.2159E+00	1.2657E+00	1.2905E+00
Z	1.0081E+00	1.0703E+00	1.0988E+00
GAME	8.7346E-01	8.5373E-01	8.5369E-01
U	6.6860E+00	1.0759E+00	1.0043E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.0629E-16	1.9689E-12	9.0419E-12
C	7.6171E-03	3.8724E-03	7.2882E-03
O+	8.8147E-23	3.1741E-17	3.5141E-16
O++	1.1853E-92	1.3182E-72	7.3186E-70
O-	1.0873E-20	1.4796E-14	1.0932E-13
C2	8.4123E-03	6.2216E-02	8.2988E-02
O2+	1.0844E-16	2.0544E-12	9.5486E-12
O2-	4.1100E-19	7.1406E-14	4.0345E-13
C	1.6166E-20	7.3983E-15	6.6697E-14
C+	6.6674E-31	4.1424E-24	1.9192E-22
C++	3.3362E-75	5.3201E-59	1.0959E-56
C-	1.0820E-34	5.5641E-27	4.0885E-25
CO	1.6028E-02	1.2748E-01	1.7246E-01
CC+	1.4596E-21	7.0501E-16	5.6782E-15
CC2	9.7548E-01	8.0643E-01	7.3726E-01
C2	4.3030E-30	4.4627E-23	1.3203E-21

P1 = 1.00E+02 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4388E+01	1.0179E+03	1.2957E+03
T	7.2927E+00	9.3599E+00	9.7681E+00
RHC	1.2413E+01	9.3193E+01	1.0989E+02
H	6.7182E-01	3.9760E-01	3.2155E-01
A	2.5464E+00	3.0577E+00	3.1816E+00
S	1.2740E+00	1.3489E+00	1.3775E+00
Z	1.0428E+00	1.1669E+00	1.2072E+00
GAME	8.5265E-01	8.5597E-01	8.5845E-01
U	8.1650E+00	1.0854E+00	1.0395E+00

SPECIES ----- MOLE FRACTIONS -----

E-	5.3900E-14	8.5723E-11	2.4289E-10
C	1.6202E-02	1.9581E-02	2.9466E-02
C+	1.2228E-19	9.2840E-15	4.8819E-14
O++	1.7442E-75	6.9028E-62	5.3066E-61
C-	1.2026E-16	1.7887E-12	6.8104E-12
C2	3.9858E-02	1.2386E-01	1.4253E-01
O2+	9.4873E-14	9.1876E-11	2.6226E-10
O2-	8.4968E-16	4.4857E-12	1.4070E-11
C	5.3572E-17	1.4268E-12	6.4555E-12
C+	2.5869E-26	9.3495E-21	1.6241E-19
C++	2.1098E-64	2.6470E-50	1.2794E-49
C-	1.2502E-29	2.9167E-23	5.6865E-22
CO	8.0502E-02	2.6655E-01	3.1379E-01
CC+	7.4912E-18	1.0837E-13	4.5746E-13
CC2	8.7801E-01	5.9001E-01	5.1422E-01
C2	6.7354E-26	7.5117E-20	7.6210E-19

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 2.60F+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1138E+02	1.3202E+03	1.6586E+03
T	7.7058E+00	9.9150E+00	1.0339E+01
RHC	1.3512E+01	1.0856E+02	1.2602E+02
H	6.1445E-01	2.8728E-01	2.0207E-01
A	2.6465E+00	3.2330E+00	3.3698E+00
S	1.3047E+00	1.3932E+00	1.4241E+00
Z	1.0651E+00	1.2266E+00	1.2731E+00
GAME	8.4968E-01	8.5944E-01	8.6275E-01
U	8.9084E+00	1.1107E+00	1.0728E+00

SPECIES	MOLE FRACTIONS		
E-	7.3205E-13	3.5310E-10	9.1718E-10
O	3.9723E-03	3.5018E-02	5.0088E-02
O+	8.5858E-18	7.6993E-14	3.8598E-13
O++	1.5539E-78	4.0918E-58	2.1474E-57
O-	2.0619E-15	1.0509E-11	3.5232E-11
C2	6.1096E-02	1.5007E-01	1.6478E-01
O2+	7.4193E-13	3.8298E-10	1.0043E-09
O2-	7.9753E-15	2.0168E-11	5.5069E-11
C	1.4492E-15	1.0258E-11	4.2827E-11
C+	6.2415E-25	8.0570E-20	2.9677E-18
C++	1.8830E-63	3.8002E-47	1.2235E-46
C-	2.5685E-28	4.9724E-22	1.2067E-20
CO	1.2524E-01	3.3445E-01	3.7896E-01
CO+	1.5060E-16	7.2085E-13	2.8106E-12
CC2	8.0959E-01	4.8046E-01	4.0617E-01
C2	2.4608E-24	1.0879E-18	1.0994E-17

P1 = 1.00E+02 N/SQ-M, US1 = 2.80F+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2977E+02	1.6731E+03	2.0816E+03
T	8.0812E+00	1.0472E+01	1.0924E+01
RHC	1.4595E+01	1.2358E+02	1.4156E+02
H	5.5250E-01	1.6795E-01	7.2745E-02
A	2.7473E+00	3.4202E+00	3.5727E+00
S	1.3365E+00	1.4392E+00	1.4723E+00
Z	1.1002E+00	1.2930E+00	1.3461E+00
GAME	8.4890E-01	8.6390E-01	8.6802E-01
U	9.6505E+00	1.1415E+00	1.1104E+00

SPECIES	MOLE FRACTIONS		
E-	3.4270E-12	1.2248E-09	3.0396E-09
O	7.9279E-03	5.7452E-02	7.5289E-02
O+	5.0190E-17	4.9995E-13	2.6121E-12
O++	7.3982E-74	5.7250E-55	3.0171E-54
O-	1.4467E-14	4.8735E-11	1.5067E-10
C2	8.3551E-02	1.6949E-01	1.7814E-01
O2+	3.4823E-12	1.3412E-09	3.3497E-09
O2-	4.2051E-14	7.2024E-11	1.7694E-10
C	1.2456E-14	5.8538E-11	2.4328E-10
C+	1.7665E-23	4.4821E-19	4.5682E-17
C++	1.0268E-59	1.7209E-44	4.5096E-44
C-	5.3514E-27	5.6059E-21	1.9872E-19
CO	1.7453E-01	3.9574E-01	4.3492E-01
CO+	1.1749E-15	3.8657E-12	1.4933E-11
CC2	7.3475E-01	3.7732E-01	3.0765E-01
C2	5.2503E-22	1.1159E-17	1.2826E-16

P1 = 1.00E+02 N/SQ-M, US1 = 3.00F+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4955E+02	2.0763E+03	2.5659E+03
T	8.4225E+00	1.1045E+01	1.1539E+01
RHC	1.5037E+01	1.3765E+02	1.5592E+02
H	4.8597E-01	3.9710E-01	-6.6934E-02
A	2.8503E+00	3.6211E+00	3.7930E+00
S	1.2656E+00	1.4866E+00	1.5220E+00
Z	1.1355E+00	1.3658E+00	1.4261E+00
GAME	8.4940E-01	8.6924E-01	8.7423E-01
U	1.0390E+01	1.1820E+00	1.1582E+00

SPECIES	MOLE FRACTIONS		
E-	1.1668E-11	3.8640E-09	9.1773E-09
O	1.2577E-02	8.8401E-02	1.1875E-01
O+	4.7709E-16	3.5460E-12	1.5992E-11
O++	1.0546E-69	1.2859E-52	1.6957E-51
O-	6.4307E-14	1.9550E-10	5.5520E-10
C2	1.0508E-01	1.7574E-01	1.8035E-01
O2+	1.1825E-11	4.2507E-09	1.0126E-08
O2-	1.5617E-13	2.1475E-10	4.8167E-10
C	6.1181E-14	3.2776E-10	1.2530E-09
C+	1.0745E-22	4.5721E-17	6.3547E-16
C++	1.9240E-50	1.4794E-42	5.9085E-42
C-	6.4907E-26	2.4272E-19	2.7099E-18
CO	2.2491E-01	4.4725E-01	4.7884E-01
CO+	5.4757E-15	2.0010E-11	7.2046E-11
CC2	6.5529E-01	2.8462E-01	2.2205E-01
C2	3.7076E-22	1.6763E-16	1.3024E-15

P1 = 1.00E+02 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7070E+02	2.5255E+03	3.1083E+03
T	8.7485E+00	1.1642E+01	1.2194E+01
RHC	1.6607E+01	1.5017E+02	1.6847E+02
H	4.1488E-01	-9.7286E-02	-2.1703E-01
A	2.9569E+00	3.6370E+00	4.0327E+00
S	1.4039E+00	1.5351E+00	1.5730E+00
Z	1.1749E+00	1.4447E+00	1.5130E+00
GAME	8.5064E-01	8.7541E-01	8.8144E-01
U	1.1127E+01	1.2323E+00	1.2166E+00

SPECIES	MOLE FRACTIONS		
E-	3.5653E-11	1.1204E-08	2.5707E-08
O	2.2454E-02	1.2898E-01	1.6927E-01
C+	2.9081E-15	2.3010E-11	9.1212E-11
O++	1.0346E-68	5.4434E-51	2.0697E-49
O-	2.6265E-13	6.7864E-10	1.7936E-09
C2	1.2677E-01	1.7912E-01	1.7008E-01
O2+	3.6387E-11	1.2305E-08	2.8204E-08
O2-	5.0027E-13	5.4288E-10	1.1208E-09
C	3.1016E-13	1.7058E-09	6.0637E-09
C+	1.9665E-21	1.1416E-15	8.3237E-15
C++	2.0558E-55	3.9090E-41	1.6722E-39
C-	1.3942E-24	4.4137E-18	3.1763E-17
CO	2.7524E-01	4.8662E-01	5.0885E-01
CO+	2.5426E-14	9.6610E-11	3.2673E-10
CC2	5.7554E-01	2.0528E-01	1.5180E-01
C2	4.2353E-21	2.0077E-15	1.2004E-14

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9320E+02	3.0186E+03	3.7080E+03
T	9.0643E+00	1.2273E+01	1.2906E+01
RHC	1.7500E+01	1.6084E+02	1.7885E+02
H	3.3921E-01	-2.4300E-01	-3.7779E-01
A	3.0676E+00	4.0697E+00	4.2954E+00
S	1.4394E+00	1.5843E+00	1.6249E+00
Z	1.2175E+00	1.5293E+00	1.6064E+00
GAME	8.5246E-01	8.8248E-01	8.8996E-01
U	1.1862E+01	1.2924E+00	1.2864E+00

SPECIES	MOLE FRACTIONS		
E-	9.5217E-11	2.9520E-08	6.7896E-08
O	3.4008E-02	1.7954E-01	2.3010E-01
C+	1.3497E-14	1.1716E-10	4.9998E-10
O++	1.8081E-65	1.6765E-48	1.2204E-45
C2+	8.8057E-13	2.0258E-09	5.1441E-09
C2+	1.4526E-01	1.6684E-01	1.4765E-01
O2+	9.7345E-11	3.2209E-08	7.3323E-08
O2+	1.3574E-12	1.1810E-09	2.2311E-09
O2+	1.2489E-12	7.5107E-09	2.8716E-08
O2+	1.7617E-20	1.2066E-14	1.0876E-13
C++	7.2331E-53	5.8495E-39	1.3606E-36
C++	1.3629E-23	4.2494E-17	3.3632E-16
C0	3.2381E-01	5.1265E-01	5.2485E-01
C0+	5.6105E-14	4.0057E-10	1.4484E-09
CC2	4.9653E-01	1.4097E-01	9.7394E-02
C2	3.0236E-20	1.5909E-14	1.0895E-13

P1 = 1.00E+02 N/SQ-M, US1 = 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4225E+02	4.1170E+03	5.0696E+03
T	9.6875E+00	1.3708E+01	1.4670E+01
RHC	1.9021E+01	1.7531E+02	1.9116E+02
H	1.7417E-01	-5.6022E-01	-7.3325E-01
A	3.3044E+00	4.6004E+00	4.9314E+00
S	1.5135E+00	1.6842E+00	1.7305E+00
Z	1.3146E+00	1.7131E+00	1.8078E+00
GAME	8.5740E-01	9.0119E-01	9.1696E-01
U	1.3322E+01	1.4471E+00	1.4722E+00

SPECIES	MOLE FRACTIONS		
E-	5.2271E-10	1.7674E-07	4.4851E-07
O	6.8394E-02	3.0415E-01	3.7056E-01
C+	1.9598E-13	2.8650E-09	1.6358E-08
O++	3.3347E-61	7.1275E-43	1.0194E-39
C-	6.8762E-12	1.3046E-08	3.1886E-08
C2	1.7125E-01	1.1237E-01	7.6525E-02
O2+	5.3550E-10	1.8363E-07	4.3498E-07
O2-	7.0954E-12	3.5553E-09	5.3268E-09
C	1.4181E-11	1.4510E-07	7.9305E-07
C+	7.4780E-19	1.5489E-12	2.5585E-11
C++	2.8118E-49	3.8406E-34	2.1903E-31
C-	6.2859E-22	3.3445E-15	3.7997E-14
C0	4.1022E-01	5.2837E-01	5.2312E-01
CC+	9.8293E-13	6.8442E-09	3.4352E-08
CC2	3.5014E-01	5.5114E-02	2.9791E-02
C2	8.7633E-19	1.0253E-12	1.1812E-11

P1 = 1.00E+02 N/SQ-M, US1 = 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1705E+02	3.5518E+03	4.3633E+03
T	9.3751E+00	1.2953E+01	1.3705E+01
RHC	1.8311E+01	1.6936E+02	1.8669E+02
H	2.5857E-01	-3.9736E-01	-5.4960E-01
A	3.1832E+00	4.3221E+00	4.5884E+00
S	1.4759E+00	1.6342E+00	1.6775E+00
Z	1.2645E+00	1.6151E+00	1.7054E+00
GAME	8.5474E-01	8.9075E-01	9.0077E-01
U	1.2592E+01	1.3633E+00	1.3657E+00

SPECIES	MOLE FRACTIONS		
E-	2.2450E-10	7.3405E-08	1.7235E-07
O	4.5135E-02	2.3887E-01	2.9869E-01
C+	4.4620E-14	5.7013E-10	2.6603E-09
O++	8.0875E-62	7.7329E-46	1.7487E-43
C-	2.4775E-12	5.4011E-09	1.3274E-08
O2	1.6026E-01	1.4378E-01	1.1518E-01
O2+	2.2987E-10	7.8834E-08	1.8025E-07
O2-	2.2308E-12	2.2149E-09	3.7793E-09
C	2.9160E-12	3.2125E-08	1.3699E-07
C+	5.4054E-20	1.2355E-13	1.247E-12
C++	6.1124E-50	2.5858E-29	1.6898E-34
C-	5.2803E-23	3.7032E-16	3.2298E-15
C0	3.6920E-01	5.2588E-01	5.284E-01
CC+	2.9027E-13	1.6168E-09	6.4922E-09
CC2	4.2128E-01	9.1470E-02	5.7583E-02
C2	1.2019E-19	1.2072E-13	9.6717E-13

P1 = 1.00E+02 N/SQ-M, US1 = 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6878E+02	4.7095E+03	5.8322E+03
T	1.0003E+01	1.4604E+01	1.6038E+01
RHC	1.5642E+01	1.7829E+02	1.9070E+02
H	8.4794E-02	-7.5150E-01	-9.3103E-01
A	3.4314E+00	4.9202E+00	5.3877E+00
S	1.5520E+00	1.7340E+00	1.7834E+00
Z	1.3681E+00	1.8088E+00	1.9070E+00
GAME	8.6044E-01	9.1647E-01	9.4914E-01
U	1.4047E+01	1.5494E+00	1.6104E+00

SPECIES	MOLE FRACTIONS		
E-	1.1047E-09	4.2980E-07	1.4076E-06
O	5.2223E-02	3.7128E-01	4.3869E-01
C+	6.2141E-13	1.5484E-08	1.4201E-07
O++	7.5288E-59	7.0545E-40	7.1160E-36
C-	1.6612E-11	2.9278E-08	7.8192E-08
C2	1.7704E-01	7.6105E-02	3.7142E-02
O2+	1.1322E-09	4.1613E-07	1.0769E-06
O2-	1.4177E-11	4.8249E-09	6.0016E-09
C	4.3927E-11	7.4343E-07	7.4646E-06
C+	2.4566E-18	2.3350E-11	1.0282E-09
C++	1.0712E-47	1.6580E-31	6.6264E-28
C-	3.0152E-21	3.2599E-14	7.7171E-13
C0	4.4577E-01	5.2301E-01	5.1250E-01
CC+	2.7215E-12	3.2273E-08	2.7189E-07
CC2	2.8466E-01	2.9604E-02	1.1658E-02
C2	3.6122E-18	1.0401E-11	2.9235E-10

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9664E+02	5.2147E+03	6.6709E+03
T	1.0326E+01	1.5808E+01	1.8649E+01
RHC	2.0161E+01	1.7695E+02	1.8075E+02
H	-9.1450E-03	-9.1084E-01	-1.1518E+00
A	3.5651E+00	5.3266E+00	6.1241E+00
S	1.5911E+00	1.7828E+00	1.8359E+00
Z	1.4249E+00	1.8999E+00	1.9790E+00
GAME	8.6387E-01	9.4466E-01	1.0162E+00
U	1.4770E+01	1.6848E+00	1.8518E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	2.2609E-09	1.1942E-06	1.0381E-05
O	1.2111E-01	4.3397E-01	4.8631E-01
O+	2.0110E-12	1.0830E-07	2.6824E-06
O++	5.9214E-50	1.2901E-30	3.2079E-30
C-	3.8214E-11	6.5346E-08	3.0347E-07
C2	1.7721E-01	3.9926E-02	8.5887E-03
O2+	2.3220E-09	9.4913E-07	2.4327E-06
O2-	2.6343E-11	5.3560E-09	5.8012E-09
C	1.1849E-10	5.5173E-06	2.7962E-04
C+	1.7449E-17	6.2741E-10	2.9319E-07
C++	2.7574E-45	1.6041E-28	1.2094E-22
C-	1.5216E-20	4.7572E-13	1.0785E-10
CO	4.7510E-01	5.1335E-01	5.0249E-01
CC+	7.5357E-14	2.0681E-07	5.2824E-06
CC2	2.2618E-01	1.2741E-02	2.3066E-03
C2	1.5501E-17	1.8064E-10	5.5657E-08

P1 = 1.00E+02 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2581E+02	5.9081E+03	7.5587E+03
T	1.0660E+01	1.7803E+01	2.2027E+01
RHC	2.0581E+01	1.6857E+02	1.7038E+02
H	-1.0766E-01	-1.0974E+00	-1.3884E+00
A	3.7059E+00	5.9283E+00	6.4786E+00
S	1.6313E+00	1.8292E+00	1.8829E+00
Z	1.4850E+00	1.9687E+00	2.0140E+00
GAME	8.6757E-01	1.0027E+00	9.4609E-01
U	1.5490E+01	1.8932E+00	2.1273E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	4.5163E-09	5.6345E-06	1.1830E-04
O-	1.5546E-01	4.7973E-01	5.0168E-01
C+	6.7629E-12	1.2814E-06	2.4546E-05
O++	4.5338E-55	7.6802E-32	2.4726E-25
C-	8.3274E-11	1.8729E-07	1.6543E-06
O2	1.7146E-01	1.2538E-02	1.8838E-03
O2+	4.6171E-09	2.0269E-06	2.7829E-06
O2-	4.5437E-11	5.0269E-09	8.0507E-09
C	3.4863E-10	1.0295E-04	9.1480E-03
C+	1.1848E-16	6.5734E-08	3.9640E-05
C++	3.5014E-44	4.0588E-24	4.5227E-18
C-	8.7339E-20	2.4273E-11	1.9769E-08
CO	4.9779E-01	5.0416E-01	4.8658E-01
CC+	2.1130E-11	2.4529E-06	5.3009E-05
CC2	1.7529E-01	3.4555E-03	4.6387E-04
C2	7.3370E-17	1.2423E-08	8.9501E-06

P1 = 1.00E+02 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5629E+02	6.4784E+03	8.4102E+03
T	1.1007E+01	2.0790E+01	2.3728E+01
RHC	2.0907E+01	1.5583E+02	1.7167E+02
H	-2.1073E-01	-1.2909E+00	-1.6161E+00
A	3.8544E+00	6.4087E+00	6.6535E+00
S	1.6720E+00	1.8709E+00	1.9229E+00
Z	1.5483E+00	1.9997E+00	2.0647E+00
GAME	8.7174E-01	9.8790E-01	9.0361E-01
U	1.6207E+01	2.1770E+00	2.2500E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	6.5824E-09	5.2957E-05	3.5664E-04
O	1.9474E-01	4.9730E-01	5.1439E-01
O+	1.9607E-11	1.3268E-05	5.0019E-05
O++	6.9273E-53	7.6505E-27	1.4921E-23
C-	1.6919E-10	8.5072E-07	3.9056E-06
C2	1.5968E-01	2.7788E-03	1.1212E-03
O2+	8.7511E-09	2.6660E-06	2.6621E-06
O2-	7.3213E-11	5.7948E-09	1.1904E-08
C	9.2618E-10	3.2737E-03	3.2070E-02
C+	4.9889E-16	9.9506E-06	2.0349E-04
C++	1.3207E-42	1.9962E-19	1.7836E-16
C-	3.5705E-19	3.6008E-09	1.6298E-07
CO	5.1333E-01	4.9583E-01	4.5140E-01
CC+	5.4155E-11	2.7933E-05	1.0455E-04
CC2	1.3206E-01	7.0822E-04	2.4802E-04
C2	2.7050E-16	1.9104E-06	5.4718E-05

P1 = 1.00E+02 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8807E+02	7.0977E+03	9.2466E+03
T	1.1374E+01	2.2858E+01	2.4799E+01
RHC	2.1132E+01	1.5241E+02	1.7545E+02
H	-3.1837E-01	-1.4942E+00	-1.8457E+00
A	4.0120E+00	6.5336E+00	6.8616E+00
S	1.7132E+00	1.9089E+00	1.9613E+00
Z	1.6146E+00	2.0373E+00	2.1252E+00
GAME	8.7650E-01	9.1666E-01	8.9336E-01
U	1.6921E+01	2.3498E+00	2.3168E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.6042E-08	2.2258E-04	6.6018E-04
O	2.3841E-01	5.0784E-01	5.2816E-01
O+	5.9790E-11	3.6778E-05	7.3513E-05
O++	1.9351E-50	2.1411E-24	1.3904E-22
C-	3.2880E-10	2.4488E-06	6.5632E-06
C2	1.4251E-01	1.2876E-03	8.9141E-04
O2+	1.6277E-08	2.5259E-06	2.6850E-06
O2-	1.0947E-10	8.3527E-09	1.6152E-08
C	2.5022E-09	1.9535E-02	5.8740E-02
C+	2.5117E-15	1.0732E-04	4.4942E-04
C++	2.0149E-40	3.5762E-17	1.1893E-13
C-	1.5980E-18	6.2362E-08	4.9443E-07
CO	5.2288E-01	4.7056E-01	4.1057E-01
CC+	1.4380E-10	7.8483E-05	1.4164E-04
CC2	9.6206E-02	3.0180E-04	1.7419E-04
C2	1.0967E-15	2.5472E-05	1.2845E-04

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2111E+02	7.7532E+03	1.0073E+04
T	1.1770E+01	2.4073E+01	2.5652E+01
RHO	2.1255E+01	1.5408E+02	1.7920E+02
H	-4.3056E-01	-1.7074E+00	-2.0826E+00
A	4.1805E+00	6.7178E+00	7.0750E+00
S	1.7547E+00	1.9461E+00	1.9999E+00
Z	1.6835E+00	2.0903E+00	2.1914E+00
GAME	8.8220E-01	8.9684E-01	8.9047E-01
U	1.7631E+01	2.4361E+00	2.3721E+00

SPECIES	MOLE FRACTIONS		
E-	2.9665E-08	4.7628E-04	1.0214E-03
O	2.8550E-01	5.2041E-01	5.4218E-01
O+	1.9510E-10	5.8649E-05	9.8635E-05
O++	2.0647E-49	3.3085E-23	7.5734E-22
O- _{30us}	6.1056E-10	4.5263E-06	9.6419E-06
C2 _{30us}	1.2077E-01	9.3410E-04	7.7383E-04
O2+ _{30us}	2.9825E-08	2.4671E-06	2.7904E-06
O2- _{30us}	1.5149E-10	1.1507E-08	2.0749E-08
SU _{30us}	7.5990E-09	4.3458E-02	8.6245E-02
CO _{30us}	1.7956E-14	3.0193E-04	7.5950E-04
C++ _{30us}	2.5484E-39	3.9155E-16	4.6306E-15
C-	8.0373E-18	2.5395E-07	1.0479E-06
CO	5.2652E-01	4.3396E-01	3.6839E-01
CO+	4.0669E-10	1.1803E-04	1.7120E-04
CC2	6.7212E-02	1.9620E-04	1.3184E-04
C2	5.2917E-15	7.9703E-05	2.1608E-04

P1 = 1.00E+02 N/SQ-M, US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9087E+02	9.0277E+03	1.1623E+04
T	1.2729E+01	2.5725E+01	2.7092E+01
RHO	2.1116E+01	1.5835E+02	1.8371E+02
H	-6.6857E-01	-2.1589E+00	-2.5800E+00
A	4.5751E+00	7.1206E+00	7.5114E+00
S	1.8387E+00	2.0213E+00	2.0787E+00
Z	1.8267E+00	2.2162E+00	2.3354E+00
GAME	9.0041E-01	8.8935E-01	8.9173E-01
U	1.9035E+01	2.5427E+00	2.4719E+00

SPECIES	MOLE FRACTIONS		
E-	1.0207E-07	1.1532E-03	1.9410E-03
C	3.8448E-01	5.4724E-01	5.6962E-01
O+	2.2856E-09	1.0499E-04	1.6134E-04
O++	4.5058E-45	9.3524E-22	1.0729E-20
U-	1.8970E-09	9.7149E-06	1.7133E-05
C2	6.8222E-02	6.9041E-04	6.4009E-04
O2+	5.8821E-08	2.6074E-06	3.1382E-06
O2-	2.2298E-10	1.8535E-08	3.0566E-08
C	8.0358E-08	9.0079E-02	1.4041E-01
C+	9.2445E-12	8.8295E-04	1.5802E-03
C++	1.7352E-35	5.9539E-15	3.5489E-14
C-	2.0546E-16	1.1661E-06	2.9243E-06
CO	5.2044E-01	3.5231E-01	2.8492E-01
CO+	2.8649E-09	1.7357E-04	2.1639E-04
CC2	2.6864E-02	1.1172E-04	8.0038E-05
C2	1.4669E-13	2.3384E-04	3.9404E-04

P1 = 1.00E+02 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5540E+02	8.4078E+03	1.0876E+04
T	1.2210E+01	2.4972E+01	2.6399E+01
RHO	2.1258E+01	1.5654E+02	1.8216E+02
H	-5.4729E-01	-1.9292E+00	-2.3273E+00
A	4.3654E+00	6.9174E+00	7.2913E+00
S	1.7964E+00	1.9834E+00	2.0389E+00
Z	1.7545E+00	2.1508E+00	2.2617E+00
GAME	8.8957E-01	8.9091E-01	8.9041E-01
U	1.8336E+01	2.4945E+00	2.4224E+00

SPECIES	MOLE FRACTIONS		
E-	5.4469E-08	7.8740E-04	1.4446E-03
O	3.3479E-01	5.3376E-01	5.5607E-01
O+	6.3186E-10	8.0725E-05	1.2729E-04
O++	2.6889E-47	2.1144E-22	2.9913E-21
C-	1.0895E-09	6.9545E-06	1.3163E-05
C2	9.5503E-02	7.8096E-04	6.9864E-04
O2+	5.3944E-08	2.5101E-06	2.9451E-06
O2-	1.9320E-10	1.4942E-08	2.5615E-08
C	2.3059E-08	6.9556E-02	1.1363E-01
C+	1.1431E-13	5.6313E-04	1.1336E-03
C++	1.7681E-37	1.8271E-15	1.3630E-14
C-	3.7951E-17	6.1494E-07	1.8511E-06
CO	5.2529E-01	3.9401E-01	3.2628E-01
CO+	1.1753E-09	1.4861E-04	1.9575E-04
CC2	4.4419E-02	1.4483E-04	1.0266E-04
C2	2.5165E-14	1.5278E-04	3.0754E-04

P1 = 1.00E+02 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2736E+02	9.5556E+03	1.2246E+04
T	1.3406E+01	2.6391E+01	2.7750E+01
RHO	2.0742E+01	1.5846E+02	1.8298E+02
H	-7.9429E-01	-2.3953E+00	-2.8398E+00
A	4.8359E+00	7.3248E+00	7.7353E+00
S	1.8796E+00	2.0601E+00	2.1196E+00
Z	1.8965E+00	2.2850E+00	2.4118E+00
GAME	9.1979E-01	8.8971E-01	8.9403E-01
U	1.9725E+01	2.5861E+00	2.5214E+00

SPECIES	MOLE FRACTIONS		
E-	2.1341E-07	1.5779E-03	2.5257E-03
O	4.3216E-01	5.6052E-01	5.8269E-01
O+	1.0416E-08	1.3268E-04	2.0259E-04
O++	1.4406E-42	3.2952E-21	3.4132E-20
C-	3.3317E-09	1.2755E-05	2.1481E-05
O2	4.0782E-02	6.2508E-04	5.8804E-04
O2+	1.8955E-07	2.7315E-06	3.3420E-06
O2-	2.2490E-10	2.2039E-08	3.5190E-08
C	3.7288E-07	1.2230E-01	1.6630E-01
C+	1.1734E-11	1.2632E-03	2.1125E-03
C++	3.3788E-33	1.5813E-14	8.3777E-14
C-	1.5172E-15	1.9147E-06	4.2685E-06
CO	5.1326E-01	3.1297E-01	2.4480E-01
CO+	1.6589E-08	1.9406E-04	2.3307E-04
CC2	1.3797E-02	8.7349E-05	6.1681E-05
C2	1.2900E-12	3.1400E-04	4.6786E-04

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 5.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6453E+02	9.8742E+03	1.2600E+04
T	1.4453E+01	2.6986E+01	2.8374E+01
RHC	1.5963E+01	1.5528E+02	1.7831E+02
H	-9.2439E-01	-2.6362E+00	-3.1049E+00
A	5.2192E+00	7.5276E+00	7.9620E+00
S	1.9196E+00	2.1002E+00	2.1619E+00
Z	1.9566E+00	2.3564E+00	2.4904E+00
GAME	9.6327E-01	8.9108E-01	8.9711E-01
U	2.0388E+01	2.6254E+00	2.5759E+00

SPECIES	MOLE FRACTIONS		
E-	5.9184E-07	2.0676E-03	3.2211E-03
O	4.7206E-01	5.7337E-01	5.9512E-01
C+	7.9006E-08	1.6464E-04	2.5321E-04
O++	2.8715E-39	9.8697E-21	1.0074E-19
C-	6.5773E-09	1.5896E-05	2.5968E-05
G2	1.7087E-02	5.6785E-04	5.2484E-04
O2+	3.4528E-07	2.8494E-06	3.5317E-06
O2-	1.8893E-10	2.4904E-08	3.8663E-08
C	3.4016E-06	1.4772E-01	1.9101E-01
C+	4.4632E-10	1.7088E-03	2.7511E-03
C++	4.8172E-30	3.6666E-14	1.8568E-13
C-	2.5916E-14	2.8330E-06	5.8322E-06
CO	5.0578E-01	2.7372E-01	2.0627E-01
CC+	1.2368E-07	2.1001E-04	2.4505E-04
CC2	5.0745E-03	6.7777E-05	4.6230E-05
C2	3.0796E-11	3.8416E-04	5.2054E-04

P1 = 1.00E+02 N/SQ-M, US1= 6.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3911E+02	9.6035E+03	1.2142E+04
T	1.8707E+01	2.7986E+01	2.9517E+01
RHC	1.7048E+01	1.3712E+02	1.5535E+02
H	-1.1969E+00	-3.1197E+00	-3.6319E+00
A	6.0721E+00	7.9201E+00	8.4136E+00
S	1.9905E+00	2.1852E+00	2.2506E+00
Z	2.0040E+00	2.5026E+00	2.6479E+00
GAME	9.8353E-01	8.9564E-01	9.0574E-01
U	2.1596E+01	2.6891E+00	2.6641E+00

SPECIES	MOLE FRACTIONS		
E-	3.6708E-05	3.2783E-03	5.0530E-03
O	5.0023E-01	5.9705E-01	6.1714E-01
O+	8.9673E-06	2.4457E-04	3.9354E-04
O++	3.8236E-29	6.2456E-20	7.2793E-19
O-	1.0354E-07	2.1537E-05	3.3981E-05
C2	8.4204E-04	4.5433E-04	4.1678E-04
O2+	7.6502E-07	2.9822E-06	3.7735E-06
O2-	1.8985E-10	2.6813E-08	3.9388E-08
C	3.0141E-03	1.9473E-01	2.3507E-01
C+	1.0102E-05	2.8305E-03	4.4471E-03
C++	1.4013E-20	1.5009E-13	7.9360E-13
C-	3.8619E-10	4.9004E-06	9.1345E-06
CO	4.9552E-01	2.0065E-01	1.3662E-01
CO+	1.6978E-05	2.2676E-04	2.9172E-04
CC2	2.1664E-04	3.8106E-05	2.2964E-05
C2	5.9363E-07	4.6613E-04	5.3916E-04

P1 = 1.00E+02 N/SQ-M, US1= 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0151E+02	9.7748E+03	1.2412E+04
T	1.6344E+01	2.7493E+01	2.8931E+01
RHC	1.8489E+01	1.4639E+02	1.6702E+02
H	-1.0585E+00	-2.8760E+00	-3.3661E+00
A	5.8000E+00	7.7219E+00	8.1820E+00
S	1.5570E+00	2.1424E+00	2.2060E+00
Z	1.5900E+00	2.4288E+00	2.5687E+00
GAME	1.0340E+00	8.9300E-01	9.0081E-01
U	2.1001E+01	2.6567E+00	2.6181E+00

SPECIES	MOLE FRACTIONS		
E-	3.7947E-06	2.6247E-03	4.0373E-03
O	4.9403E-01	5.8553E-01	6.0655E-01
C+	1.1161E-06	2.0078E-04	3.1376E-04
O++	1.1151E-33	2.5445E-20	2.6628E-19
O-	2.1830E-08	1.8698E-05	2.9888E-05
C2	3.8156E-03	5.0847E-04	4.7499E-04
O2+	7.1677E-07	2.9135E-06	3.4481E-06
O2-	1.5639E-10	2.6134E-08	3.9461E-08
C	1.0380E-04	1.7182E-01	2.1382E-01
C+	9.1821E-08	2.2234E-03	3.5068E-03
C++	7.1461E-25	7.5821E-14	3.8154E-13
C-	2.7506E-12	3.8120E-06	7.4039E-06
CO	5.0101E-01	2.3636E-01	1.7043E-01
CC+	1.8920E-06	2.2011E-04	2.5036E-04
CC2	1.0345E-03	5.1263E-05	3.3251E-05
C2	4.5720E-09	4.3380E-04	5.4189E-04

P1 = 1.00E+02 N/SQ-M, US1= 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7979E+02	9.9659E+03	1.2572E+04
T	2.0166E+01	2.8618E+01	3.0329E+01
RHC	1.6605E+01	1.3496E+02	1.5176E+02
H	-1.3405E+00	-3.3831E+00	-3.9243E+00
A	6.1067E+00	8.1511E+00	8.6992E+00
S	2.0211E+00	2.2201E+00	2.2938E+00
Z	2.0301E+00	2.5803E+00	2.7315E+00
GAME	9.1089E-01	8.9976E-01	9.1350E-01
U	2.2255E+01	2.7421E+00	2.7342E+00

SPECIES	MOLE FRACTIONS		
E-	1.4083E-04	4.1131E-03	6.4805E-03
O	5.0707E-01	6.0824E-01	6.2717E-01
O+	2.0549E-05	3.0675E-04	5.2034E-04
O++	5.1396E-27	1.8694E-19	2.6692E-18
O-	2.8476E-07	2.5768E-05	4.0565E-05
C2	4.1289E-04	4.1500E-04	3.6864E-04
O2+	6.6200E-07	3.1848E-06	4.0929E-06
O2-	2.7337E-10	2.9353E-08	4.1907E-08
C	1.5136E-02	2.1712E-01	2.5941E-01
C+	8.0235E-05	3.6008E-03	5.7546E-03
C++	1.3009E-18	3.2726E-13	1.9515E-12
C-	5.4041E-09	6.4486E-06	1.1724E-05
CO	4.7699E-01	1.6541E-01	1.0345E-01
CC+	3.6676E-05	2.3463E-04	2.5375E-04
CC2	5.9701E-05	2.8130E-05	1.5111E-05
C2	6.1754E-06	4.9334E-04	5.2429E-04

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2297E+02	1.0629E+04	1.3403E+04
T	2.1018E+01	2.9371E+01	3.1392E+01
RMC	1.6630E+01	1.3601E+02	1.5154E+02
H	-1.4891E+00	-3.6623E+00	-4.2391E+00
A	6.2139E+00	8.4128E+00	9.0474E+00
S	2.0514E+00	2.2663E+00	2.3364E+00
Z	2.0673E+00	2.6609E+00	2.8175E+00
GAME	8.8866E-01	9.0562E-01	9.2549E-01
U	2.2952E+01	2.8120E+00	2.8279E+00

SPECIES	MOLE FRACTIONS		
E-	2.9213E-04	5.2010E-03	8.6009E-03
O	5.1589E-01	6.1884E-01	6.3601E-01
C+	3.0173E-05	3.9589E-04	7.3272E-04
O++	5.8776E-26	6.4165E-19	1.3041E-17
C-	5.1312E-07	3.1401E-05	4.9915E-05
O2	2.9945E-04	3.8002E-04	3.1988E-04
O2+	3.1240E-08	3.4894E-06	4.5881E-06
O2-	3.8403E-10	3.2951E-08	4.5448E-08
O2+	3.8403E-10	3.2951E-08	4.5448E-08
C++	2.0506E-04	4.5999E-03	7.6760E-03
C++	1.1222E-17	7.6897E-13	5.7308E-12
C-	2.0795E-08	9.5301E-06	1.5348E-05
CO	4.5072E-01	1.3132E-01	7.2146E-02
CC+	5.6225E-05	2.4166E-04	2.5298E-04
CC2	6.6772E-05	2.0074E-05	9.0003E-06
C2	1.8383E-05	5.0671E-04	4.8394E-04

P1 = 1.00E+02 N/SQ-M, US1 = 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1443E+02	1.2274E+04	1.5556E+04
T	2.2140E+01	3.1284E+01	3.4716E+01
RMC	1.7066E+01	1.3893E+02	1.5019E+02
H	-1.8004E+00	-4.2526E+00	-4.9284E+00
A	6.4708E+00	9.0435E+00	1.0019E+01
S	2.1116E+00	2.3460E+00	2.4219E+00
Z	2.1554E+00	2.8241E+00	2.9834E+00
GAME	8.7741E-01	9.2571E-01	9.6921E-01
U	2.4384E+01	2.9992E+00	3.1247E+00

SPECIES	MOLE FRACTIONS		
E-	6.8179E-04	8.7533E-03	1.8177E-02
O	5.3536E-01	6.3667E-01	6.4484E-01
O+	4.8255E-05	7.3651E-04	1.9571E-03
O++	1.0768E-24	1.2109E-17	1.1438E-15
C-	1.0678E-06	4.7282E-05	8.0077E-05
O2	2.2038E-04	3.0039E-04	2.0107E-04
O2+	5.5041E-07	4.3563E-06	6.2463E-06
O2-	5.7261E-10	4.0266E-08	4.9048E-08
C	7.1081E-02	2.7506E-01	2.9524E-01
C+	5.5509E-04	7.8291E-03	1.6092E-02
C++	1.2752E-16	5.6213E-12	1.1220E-10
C-	9.2962E-08	1.4585E-05	2.6864E-05
CO	3.9187E-01	6.9871E-02	2.2844E-02
CO+	7.9019E-05	2.4526E-04	2.2848E-04
CO2	4.0922E-05	8.1779E-06	1.7520E-06
C2	5.4955E-05	4.6021E-04	3.0027E-04

P1 = 1.00E+02 N/SQ-M, US1 = 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6793E+02	1.1418E+04	1.4420E+04
T	2.1633E+01	3.0253E+01	3.2796E+01
RMC	1.6825E+01	1.3756E+02	1.5146E+02
H	-1.6424E+00	-3.9527E+00	-4.5740E+00
A	6.3401E+00	8.7098E+00	9.4807E+00
S	2.0814E+00	2.3068E+00	2.3792E+00
Z	2.1097E+00	2.7436E+00	2.9030E+00
GAME	8.8071E-01	9.1395E-01	9.4410E-01
U	2.3666E+01	2.8966E+00	2.9573E+00

SPECIES	MOLE FRACTIONS		
E-	4.7380E-04	6.6851E-03	1.2045E-02
O	5.2549E-01	6.2858E-01	6.4258E-01
C+	3.9112E-05	5.2950E-04	1.1273E-03
O++	2.9865E-25	2.5674E-18	9.4289E-17
C-	7.7409E-07	3.8522E-05	6.2678E-05
O2	2.4929E-04	3.4217E-04	2.6388E-04
O2+	5.9035E-07	3.8783E-06	5.2779E-06
O2-	4.6705E-10	3.6777E-08	4.8320E-08
C	5.1442E-02	2.5825E-01	2.8811E-01
C+	3.6617E-04	5.9558E-03	1.0750E-02
C++	4.4672E-17	1.9793E-12	2.1517E-11
C-	4.9330E-08	1.1226E-05	2.0242E-05
CO	4.2179E-01	9.8854E-02	4.4379E-02
CC+	6.8760E-05	2.4569E-04	2.4555E-04
CO2	5.0891E-05	1.3375E-05	4.5067E-06
C2	3.5231E-05	4.9706E-04	4.0794E-04

P1 = 1.00E+02 N/SQ-M, US1 = 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6238E+02	1.3172E+04	1.6792E+04
T	2.2587E+01	3.2583E+01	3.7216E+01
RMC	1.7326E+01	1.3927E+02	1.4765E+02
H	-1.5631E+00	-4.5612E+00	-5.3033E+00
A	6.6035E+00	9.4444E+00	1.0591E+01
S	2.1420E+00	2.3854E+00	2.4639E+00
Z	2.2036E+00	2.9028E+00	3.0559E+00
GAME	8.7613E-01	9.4307E-01	9.8636E-01
U	2.5104E+01	3.1270E+00	3.3351E+00

SPECIES	MOLE FRACTIONS		
E-	9.1632E-04	1.1967E-02	2.8980E-02
O	5.4529E-01	6.4266E-01	6.4011E-01
C+	5.8095E-05	1.1000E-03	3.7512E-03
O++	3.2317E-24	7.6652E-17	2.0724E-14
C-	1.3974E-06	5.8534E-05	1.0197E-04
O2	2.0112E-04	2.5144E-04	1.4217E-04
O2+	6.0081E-07	4.9692E-06	7.5504E-06
O2-	6.8531E-10	4.2761E-08	4.6869E-08
C	9.0855E-02	2.8818E-01	2.9131E-01
C+	7.7138E-04	1.0701E-02	2.5155E-02
C++	3.0456E-16	1.9280E-11	7.5256E-10
C-	1.5359E-07	1.8883E-05	3.4094E-05
CO	3.6171E-01	4.4417E-02	1.0010E-02
CO+	8.7742E-05	2.3847E-04	2.0300E-04
CO2	3.3774E-05	4.2990E-06	5.4166E-07
C2	7.6239E-05	3.9232E-04	1.9145E-04

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1173E+02	1.4094E+04	1.8100E+04
T	2.2999E+01	3.4262E+01	3.9920E+01
RHC	1.7550E+01	1.3825E+02	1.4515E+02
H	-2.1303E+00	-4.8778E+00	-5.6927E+00
A	6.7382E+00	9.9221E+00	1.1080E+01
S	2.1727E+00	2.4239E+00	2.5044E+00
Z	2.2538E+00	2.9755E+00	3.1236E+00
GAME	8.7593E-01	9.6567E-01	9.8450E-01
U	2.5825E+01	3.2896E+00	3.5580E+00

P1 = 1.00E+02 N/SQ-M, US1= 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6246E+02	1.5029E+04	1.9455E+04
T	2.3390E+01	3.6361E+01	4.2458E+01
RHC	1.7846E+01	1.3596E+02	1.4355E+02
H	-2.3021E+00	-5.2021E+00	-6.0904E+00
A	6.8750E+00	1.0427E+01	1.1502E+01
S	2.2038E+00	2.4613E+00	2.5429E+00
Z	2.3058E+00	3.0401E+00	3.1920E+00
GAME	8.7641E-01	9.8351E-01	9.7614E-01
U	2.6546E+01	3.4885E+00	3.7664E+00

SPECIES	MOLE FRACTIONS		
E-	1.1795E-03	1.7274E-02	4.4545E-02
O	5.5515E-01	6.4502E-01	6.2836E-01
C+	6.9004E-05	1.7969E-03	6.9809E-03
O++	8.6188E-24	7.0388E-16	3.2311E-13
C-	1.7666E-06	7.2973E-05	1.2413E-04
O2	1.8702E-04	1.9754E-04	1.0039E-04
O2+	6.1877E-07	5.7714E-06	9.0340E-06
O2-	8.0563E-10	4.3450E-08	4.3100E-08
C	1.1052E-01	2.9511E-01	2.7759E-01
C+	1.0164E-03	1.5345E-02	3.7543E-02
C++	6.4976E-16	8.3858E-11	4.5018E-09
C-	2.3325E-07	2.4229E-05	4.0622E-05
CO	3.3165E-01	2.4624E-02	4.4167E-03
CC+	9.5464E-05	2.2384E-04	1.7697E-04
CO2	2.8244E-05	1.8575E-06	1.6945E-07
C2	9.8049E-05	2.9978E-04	1.1633E-04

SPECIES	MOLE FRACTIONS		
E-	1.4747E-03	2.5976E-02	6.2795E-02
O	5.6488E-01	6.4204E-01	6.1225E-01
C+	8.1352E-05	3.1624E-03	1.1658E-02
O++	2.1253E-23	8.7437E-15	3.1278E-12
C-	2.1757E-06	9.0453E-05	1.4281E-04
O2	1.7579E-04	1.4631E-04	7.4457E-05
O2+	6.4252E-07	6.7945E-06	1.0489E-05
O2-	9.3274E-10	4.1939E-08	3.9273E-08
C	1.2992E-01	2.9335E-01	2.5944E-01
C+	1.2930E-03	2.2725E-02	5.1159E-02
C++	1.2903E-15	4.4028E-10	1.9443E-08
C-	3.3415E-07	3.0268E-05	4.5056E-05
CO	3.6192E-01	1.2066E-02	2.1966E-03
CC+	1.0225E-04	2.0247E-04	1.5511E-04
CO2	2.3724E-05	6.7235E-07	6.2954E-08
C2	1.1548E-04	2.0472E-04	7.3278E-05

P1 = 1.00E+02 N/SQ-M, US1= 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0145E+03	1.5981E+04	2.0845E+04
T	2.3771E+01	3.8671E+01	4.4755E+01
RHC	1.8089E+01	1.3333E+02	1.4276E+02
H	-2.4784E+00	-5.5343E+00	-6.4948E+00
A	7.0148E+00	1.0871E+01	1.1893E+01
S	2.2353E+00	2.4973E+00	2.5797E+00
Z	2.3594E+00	3.0994E+00	3.2625E+00
GAME	8.7736E-01	9.8595E-01	9.6870E-01
U	2.7266E+01	3.7037E+00	3.9546E+00

P1 = 1.00E+02 N/SQ-M, US1= 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0680E+03	1.6958E+04	2.2244E+04
T	2.4149E+01	4.0926E+01	4.6848E+01
RHC	1.8315E+01	1.3120E+02	1.4249E+02
H	-2.6594E+00	-5.8750E+00	-6.9064E+00
A	7.1581E+00	1.1253E+01	1.2267E+01
S	2.2671E+00	2.5319E+00	2.6153E+00
Z	2.4146E+00	3.1584E+00	3.3353E+00
GAME	8.7874E-01	9.7960E-01	9.6312E-01
U	2.7985E+01	3.9118E+00	4.1267E+00

SPECIES	MOLE FRACTIONS		
E-	1.8076E-03	3.8446E-02	8.2085E-02
O	5.7442E-01	6.3343E-01	5.9375E-01
O+	5.5591E-05	5.5395E-03	1.7612E-02
O++	5.1167E-23	1.0441E-13	1.9618E-11
C-	2.6420E-06	1.0865E-04	1.5728E-04
C2	1.6618E-04	1.0697E-04	5.7897E-05
O2+	6.7113E-07	7.9629E-06	1.1825E-05
O2-	1.0695E-09	3.9019E-08	3.5796E-08
C	1.4897E-01	2.8336E-01	2.4034E-01
C+	1.6062E-03	3.2863E-02	6.4529E-02
C++	2.4677E-15	2.2244E-09	6.2707E-08
C-	4.5874E-07	3.5882E-05	4.7505E-05
CO	2.7247E-01	5.7931E-03	1.2273E-03
CC+	1.0827E-04	1.7954E-04	1.3720E-04
CO2	1.5888E-05	2.3661E-07	2.7597E-08
C2	1.3971E-04	1.3243E-04	4.8481E-05

SPECIES	MOLE FRACTIONS		
E-	2.1855E-03	5.3617E-02	1.0162E-01
O	5.8373E-01	6.2074E-01	5.7380E-01
C+	1.1228E-04	9.0403E-03	2.4692E-02
O++	1.2222E-22	9.0717E-13	8.9262E-11
C-	3.1599E-06	1.2497E-04	1.6796E-04
O2	1.5752E-04	8.0521E-05	4.6563E-05
O2+	7.0430E-07	9.1494E-06	1.3016E-05
O2-	1.2122E-09	3.5813E-08	3.2642E-08
C	1.6756E-01	2.6854E-01	2.2170E-01
C+	1.9627E-03	4.4573E-02	7.7011E-02
C++	4.6153E-15	9.0257E-09	1.6335E-07
C-	6.0995E-07	4.0142E-05	4.8424E-05
CO	2.4400E-01	2.9920E-03	7.4772E-04
CC+	1.1356E-04	1.5913E-04	1.2215E-04
CO2	1.6574E-05	9.2547E-08	1.3668E-08
C2	1.5807E-04	8.6640E-05	3.3369E-05

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

 $P_1 = 1.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1227E+03	1.7964E+04	2.3709E+04
T	2.4530E+01	4.3023E+01	4.8782E+01
RHC	1.8522E+01	1.2969E+02	1.4253E+02
H	-2.8449E+00	-6.2246E+00	-7.3256E+00
A	7.3057E+00	1.1605E+01	1.2631E+01
S	2.2952E+00	2.5655E+00	2.6501E+00
Z	2.4711E+00	3.2194E+00	3.4100E+00
GAME	8.8053E-01	9.7228E-01	9.5905E-01
U	2.8704E+01	4.1048E+00	4.2864E+00

SPECIES	MOLE FRACTIONS	
E-	2.6172E-03	7.0257E-02
O	5.9277E-01	6.0550E-01
C+	1.3208E-04	1.3615E-02
O++	2.8195E-22	5.5449E-12
C-3L	3.7406E-06	1.3839E-04
C2	1.4942E-04	6.2936E-05
O2+	7.4199E-07	1.0278E-05
O2-	1.3611E-09	3.2792E-08
C10-3L	1.8565E-01	2.5181E-01
C+	2.3708E-03	5.6671E-02
C++	8.4165E-15	2.8874E-08
C-	7.9114E-07	4.2881E-05
CO	2.1600E-01	1.6934E-03
CC+	1.1812E-04	1.4188E-04
CO2	1.3653E-05	4.1277E-08
C2	1.7388E-04	5.8629E-05

 $P_1 = 1.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2361E+03	2.0034E+04	2.6640E+04
T	2.5325E+01	4.6756E+01	5.2303E+01
RHC	1.8857E+01	1.2795E+02	1.4291E+02
H	-3.2296E+00	-6.9495E+00	-8.1886E+00
A	7.6188E+00	1.2270E+01	1.3335E+01
S	2.3645E+00	2.6305E+00	2.7180E+00
Z	2.5879E+00	3.3487E+00	3.5640E+00
GAME	8.8555E-01	9.6161E-01	9.5394E-01
U	3.0134E+01	4.4476E+00	4.5803E+00

SPECIES	MOLE FRACTIONS	
E-	3.7063E-03	1.0513E-01
O	6.0991E-01	5.7054E-01
C+	1.8581E-04	2.5658E-02
O++	1.5603E-21	9.3644E-11
C-	5.1339E-06	1.5666E-04
O2	1.3327E-04	4.1802E-05
O2+	8.3180E-07	1.2241E-05
O2-	1.6708E-09	2.7459E-08
C	2.2000E-01	2.1806E-01
C+	3.4011E-03	7.9548E-02
C++	2.8108E-14	1.7332E-07
C-	1.2611E-06	4.4679E-05
CO	1.6232E-01	6.7052E-04
CC+	1.2493E-04	1.1444E-04
CO2	8.9017E-06	1.1081E-08
C2	1.9525E-04	2.9395E-05

 $P_1 = 1.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1787E+03	1.8992E+04	2.5170E+04
T	2.4920E+01	4.4959E+01	5.0592E+01
RHC	1.8704E+01	1.2867E+02	1.4271E+02
H	-3.0350E+00	-6.5828E+00	-7.7529E+00
A	7.4588E+00	1.1942E+01	1.2986E+01
S	2.3317E+00	2.5983E+00	2.6843E+00
Z	2.5289E+00	3.2829E+00	3.4863E+00
GAME	8.8277E-01	9.6624E-01	9.5608E-01
U	2.9420E+01	4.2823E+00	4.4369E+00

SPECIES	MOLE FRACTIONS	
E-	3.1171E-03	8.7579E-02
O	6.0152E-01	5.8860E-01
C+	1.5606E-04	1.9181E-02
O++	6.4915E-22	2.5454E-11
C-	4.3942E-06	1.4886E-04
O2	1.4143E-04	5.0722E-05
O2+	7.8423E-07	1.1314E-05
O2-	1.5146E-09	3.0021E-08
C	2.0315E-01	2.3473E-01
C+	2.8437E-03	6.8452E-02
C++	1.5260E-14	7.6163E-08
C-	1.0064E-06	4.4304E-05
CO	1.8875E-01	1.0347E-03
CC+	1.2193E-04	1.2720E-04
CO2	1.1150E-05	2.0522E-08
C2	1.8649E-04	4.0977E-05

 $P_1 = 1.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2946E+03	2.1079E+04	2.8106E+04
T	2.5764E+01	4.8440E+01	5.3933E+01
RHC	1.8578E+01	1.2737E+02	1.4305E+02
H	-3.4288E+00	-7.3246E+00	-8.6323E+00
A	7.7876E+00	1.2592E+01	1.3680E+01
S	2.3575E+00	2.6623E+00	2.7515E+00
Z	2.6477E+00	3.4165E+00	3.6431E+00
GAME	8.8905E-01	9.5809E-01	9.5245E-01
U	3.0846E+01	4.6028E+00	4.7182E+00

SPECIES	MOLE FRACTIONS	
E-	4.4151E-03	1.2265E-01
C	6.1791E-01	5.5162E-01
O+	2.2371E-04	3.2965E-02
O++	3.9522E-21	2.9062E-10
C-	5.5777E-06	1.6204E-04
C2	1.2471E-04	3.4992E-05
O2+	8.8521E-07	1.3045E-05
O2-	1.8266E-09	2.5062E-08
C	2.3608E-01	2.0215E-01
C+	4.0711E-03	8.9779E-02
C++	5.3089E-14	3.5228E-07
C-	1.5621E-06	4.4251E-05
CO	1.3683E-01	4.5428E-04
CC+	1.2701E-04	1.0315E-04
CO2	6.9221E-06	6.3630E-09
C2	1.9950E-04	2.1516E-05

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 9.00F+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3544E+03	2.2117E+04	2.9554E+04
T	2.6237E+01	5.0028E+01	5.5496F+01
RHO	1.5061E+01	1.2682E+02	1.4303E+02
H	-3.6325E+00	-7.7078E+00	-9.0845E+00
A	7.9682E+00	1.2908E+01	1.4022E+01
S	2.4307E+00	2.6939E+00	2.7847E+00
Z	2.7083F+00	3.4859E+00	3.7234E+00
GAME	8.935E-01	9.5543E-01	9.5148E-01
U	3.1555E+01	4.7497F+00	4.8516E+00

SPECIES	MOLE FRACTIONS		
E-	5.2888E-03	1.3999E-01	1.9463E-01
C	6.2544E-01	5.3206E-01	4.6402E-01
O+	2.7345E-04	4.1017E-02	7.2687E-02
O++	1.0468E-20	7.8866E-10	1.3621E-08
C+	6.9501E-06	1.6527E-04	1.8048E-04
C2	1.1553E-04	2.9603E-05	1.9438E-05
O2+	9.4580E-07	1.3715E-05	1.6398E-05
O2-	1.9777E-09	2.2794E-08	1.9685E-08
C	2.5126E-01	1.8718E-01	1.4613E-01
C+	4.8952E-03	9.9075E-02	1.2207E-01
C++	1.0321E-13	6.5566E-07	3.6773E-06
C-	1.9184E-06	4.3215E-05	4.1459E-05
CO	1.1239E-01	3.1843E-04	1.2193E-04
CC+	1.2802E-04	9.3017E-05	6.9931E-05
CO2	5.1980E-06	3.8268E-09	1.0103E-09
C2	1.9855E-04	1.5996E-05	7.1103E-06

P1 = 1.00E+02 N/SQ-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4775E+03	2.4091E+04	3.2292E+04
T	2.7378E+01	5.2969E+01	5.8452E+01
RHO	1.9071E+01	1.2532E+02	1.4212E+02
H	-4.0534E+00	-8.4970E+00	-1.0013E+01
A	8.3854E+00	1.3528F+01	1.4698E+01
S	2.4973E+00	2.7567E+00	2.8511E+00
Z	2.8298E+00	3.6292E+00	3.8872E+00
GAME	9.0759E-01	9.5196E-01	9.5082E-01
U	3.2960E+01	5.0234E+00	5.1081E+00

SPECIES	MOLE FRACTIONS		
E-	7.8909E-03	1.7378E-01	2.2851E-01
O	6.3851E-01	4.9159E-01	4.1854E-01
O+	4.4015E-04	5.9012E-02	9.5611E-02
O++	9.7924E-20	4.2826E-09	5.3691E-08
C-	9.4479E-06	1.6599E-04	1.7186E-04
C2	9.4333E-05	2.1552E-05	1.4044E-05
O2+	1.0976E-06	1.4608E-05	1.6449E-05
O2-	2.2380E-09	1.8547E-08	1.5362E-08
C	2.7792E-01	1.6023F-01	1.2394E-01
C+	7.3361E-03	1.1488E-01	1.3302E-01
C++	4.7063E-13	1.8645E-06	8.5016E-06
C-	2.8544E-06	3.9887E-05	3.6505E-05
CC	6.7486E-02	1.6826E-04	6.8433E-05
CO+	1.2590E-04	7.5463E-05	5.5451E-05
CO2	2.4910E-06	1.5229E-09	4.3067E-10
C2	1.7818E-04	9.1415F-06	4.1250E-06

P1 = 1.00E+02 N/SQ-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4154E+03	2.3128E+04	3.0959E+04
T	2.6767E+01	5.1534E+01	5.6989E+01
RHO	1.5096E+01	1.2618E+02	1.4281E+02
H	-3.8407E+00	-8.0986E+00	-9.5449E+00
A	8.1652E+00	1.3220E+01	1.4358E+01
S	2.4640E+00	2.7253E+00	2.8176E+00
Z	2.7691E+00	3.5569E+00	3.8040E+00
GAME	8.9947E-01	9.5343E-01	9.5096E-01
U	3.2260F+01	4.8896E+00	4.9822E+00

SPECIES	MOLE FRACTIONS		
E-	6.4039E-03	1.5705E-01	2.1167E-01
O	6.3237E-01	5.1201E-01	4.4147E-01
O+	3.4162E-04	4.9728E-02	8.3894E-02
O++	3.0191E-20	1.9205E-09	2.7706E-08
C-	8.0882E-06	1.6653E-04	1.7703E-04
C2	1.0548E-04	2.5213E-05	1.6563E-05
O2+	1.0155E-06	1.4239E-05	1.6522E-05
O2-	2.1179E-09	2.0628E-08	1.7498E-08
C	2.6532E-01	1.7321E-01	1.3465E-01
C+	5.9439E-03	1.0743E-01	1.2790E-01
C++	2.1209E-13	1.1375E-06	5.6751E-06
C-	2.3430E-06	4.1723E-05	3.9076E-05
CO	8.9180E-02	2.2917E-04	9.1094E-05
CC+	1.2776E-04	8.3842E-05	6.2430E-05
CO2	3.7205E-06	2.3837E-09	6.5838E-10
C2	1.9167E-04	1.2039E-05	5.4160E-06

P1 = 1.00E+02 N/SQ-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5405E+03	2.4963F+04	3.3496E+04
T	2.8112E+01	5.4332E+01	5.9849E+01
RHC	1.8966E+01	1.2408E+02	1.4096E+02
H	-4.2706E+00	-8.9012E+00	-1.0487E+01
A	8.6398E+00	1.3831E+01	1.5033E+01
S	2.5305E+00	2.7882E+00	2.8844E+00
Z	2.8892E+00	3.7026E+00	3.9706E+00
GAME	9.1904E-01	9.5092E-01	9.5103E-01
U	3.3650E+01	5.1512E+00	5.2314E+00

SPECIES	MOLE FRACTIONS		
E-	9.9913E-03	1.9012E-01	2.4468E-01
O	6.4352E-01	4.7098E-01	3.9597E-01
O+	5.9314E-04	6.8749E-02	1.0742E-01
O++	3.8978E-19	8.8402E-09	9.8113E-08
C-	1.1115E-05	1.6373E-04	1.6533E-04
O2	8.1890E-05	1.8445E-05	1.1890E-05
O2+	1.1969E-06	1.4809E-05	1.6191E-05
O2-	2.3227E-09	1.6536E-08	1.3360E-08
C	2.8843E-01	1.4823E-01	1.1421E-01
C+	9.2895E-03	1.2148E-01	1.3737E-01
C++	1.1853E-12	2.9110E-06	1.2294E-05
C-	3.4790E-06	3.7786E-05	3.3883E-05
CC	4.7797E-02	1.2554E-04	5.1970E-05
CO+	1.2202E-04	6.7779E-05	4.9144E-05
CO2	1.5175E-06	9.9224E-10	2.8514E-10
C2	1.5759E-04	6.9908E-06	3.1609E-06

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6043E+03	2.5704E+04	3.4516E+04
T	2.9025E+01	5.5628E+01	6.1191E+01
RHC	1.8760E+01	1.2233E+02	1.3911E+02
H	-4.4922E+00	-9.3111E+00	-1.0966E+01
A	8.9412E+00	1.4130E+01	1.5365E+01
S	2.5635E+00	2.8200E+00	2.9181E+00
Z	2.9463E+00	3.7772E+00	4.0548E+00
GAME	9.3486E-01	9.5024E-01	9.5155E-01
U	3.4330E+01	5.2729E+00	5.3513E+00

SPECIES	MOLE FRACTIONS		
E-	1.3143E-02	2.0607E-01	2.6036E-01
O	6.4680E-01	4.5025E-01	3.7362E-01
O+	8.4998E-04	7.8865E-02	1.1933E-01
O++	1.9989E-18	1.7088E-08	1.7121E-07
C-	1.3214E-05	1.5983E-04	1.5747E-04
C2	8.6020E-05	1.5765E-05	1.0012E-05
O2+	1.3213E-06	1.4836E-05	1.5748E-05
O2-	2.3560E-09	1.4586E-08	1.1464E-08
C	2.29579E-01	1.3710E-01	1.0525E-01
C+	1.2193E-02	1.2732E-01	1.4112E-01
C++	3.5250E-12	4.3646E-06	1.7306E-05
C-	4.2495E-06	3.5476E-05	3.1201E-05
CO	3.0893E-02	9.4761E-05	3.9654E-05
CO+	1.1563E-04	6.0688E-05	4.3365E-05
CC2	8.1156E-07	6.5493E-10	1.8931E-10
C2	1.3033E-04	5.3689E-06	2.4242E-06

P1 = 1.00E+02 N/SQ-M, US1 = 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8336E+03	2.7274E+04	3.6655E+04
T	3.3761E+01	5.9718E+01	6.5550E+01
RHC	1.7422E+01	1.1288E+02	1.2836E+02
H	-5.2019E+00	-1.0784E+01	-1.2684E+01
A	1.0084E+01	1.5152E+01	1.6519E+01
S	2.6732E+00	2.9331E+00	3.0380E+00
Z	3.1172E+00	4.0459E+00	4.3564E+00
GAME	9.6629E-01	9.5016E-01	9.5561E-01
U	3.6625E+01	5.6609E+00	5.7554E+00

SPECIES	MOLE FRACTIONS		
E-	4.1558E-02	2.5872E-01	3.1152E-01
O	6.3346E-01	3.7797E-01	2.9792E-01
O+	4.3206E-03	1.1610E-01	1.6097E-01
O++	2.8910E-15	1.1668E-07	9.1692E-07
C-	2.3899E-05	1.3699E-04	1.2348E-04
C2	2.7150E-05	8.8961E-06	5.2073E-06
O2+	1.9965E-06	1.3744E-05	1.3117E-05
O2-	1.9685E-09	8.6689E-09	6.0388E-09
C	2.7966E-01	1.0422E-01	7.8776E-02
C+	3.7187E-02	1.4271E-01	1.5056E-01
C++	4.1557E-10	1.4244E-05	4.9144E-05
C-	7.6383E-06	2.6864E-05	2.2092E-05
CO	3.6315E-02	3.7452E-05	1.5547E-05
CO+	7.9909E-05	4.0171E-05	2.6968E-05
CC2	3.8399E-08	1.6144E-10	4.4549E-11
C2	3.9120E-05	2.1709E-06	9.4999E-07

P1 = 1.00E+02 N/SQ-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6688E+03	2.6272E+04	3.5293E+04
T	3.0175E+01	5.6854E+01	6.2473E+01
RHO	1.8438E+01	1.1994E+02	1.3646E+02
H	-4.7180E+00	-9.7252E+00	-1.1449E+01
A	9.2889E+00	1.4424E+01	1.5694E+01
S	2.5958E+00	2.8521E+00	2.9521E+00
Z	2.9994E+00	3.8528E+00	4.1399E+00
GAME	9.5333E-01	9.4987E-01	9.5236E-01
U	3.4996E+01	5.3883E+00	5.4672E+00

SPECIES	MOLE FRACTIONS		
E-	1.8075E-02	2.2162E-01	2.7554E-01
C	6.4739E-01	4.2951E-01	3.5158E-01
O+	1.3106E-03	8.9256E-02	1.3126E-01
O++	1.4205E-17	3.1190E-08	2.8653E-07
C-	1.5862E-05	1.5441E-04	1.4843E-04
C2	5.4004E-05	1.3431E-05	8.3737E-06
O2+	1.4753E-06	1.4684E-05	1.5133E-05
O2-	2.3154E-09	1.2676E-08	9.6892E-09
C	2.9839E-01	1.2679E-01	9.9606E-02
C+	1.6678E-02	1.3247E-01	1.4436E-01
C++	1.2850E-11	6.3180E-06	2.3787E-05
C-	5.1833E-06	3.3011E-05	2.8491E-05
CO	1.7874E-02	7.2122E-05	3.0331E-05
CO+	1.0653E-04	5.4134E-05	3.8076E-05
CC2	3.7661E-07	4.3549E-10	1.2559E-10
C2	9.9104E-05	4.1321E-06	1.8576E-06

P1 = 1.00E+02 N/SQ-M, US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0071E+03	2.8648E+04	3.8534E+04
T	3.7062E+01	6.2571E+01	6.8768E+01
RHC	1.6722E+01	1.0786E+02	1.2240E+02
H	-5.9144E+00	-1.1899E+01	-1.3988E+01
A	1.0693E+01	1.5903E+01	1.7393E+01
S	2.7457E+00	3.0127E+00	3.1226E+00
Z	3.2386E+00	4.2448E+00	4.5780E+00
GAME	9.5259E-01	9.5221E-01	9.6095E-01
U	3.8269E+01	5.9420E+00	6.0550E+00

SPECIES	MOLE FRACTIONS		
E-	7.4903E-02	2.9343E-01	3.4483E-01
O	6.0571E-01	3.2715E-01	2.4641E-01
C+	1.0713E-02	1.4380E-01	1.9031E-01
O++	1.6291E-13	3.7698E-07	2.7107E-06
C-	3.0332E-05	1.1869E-04	9.9400E-05
O2	1.5580E-05	5.8501E-06	3.1315E-06
O2+	2.5150E-06	1.2432E-05	1.0900E-05
O2-	1.6099E-09	5.8212E-09	3.6102E-09
C	2.4337E-01	8.5709E-02	6.3790E-02
C+	6.4166E-02	1.4967E-01	1.5441E-01
C++	5.5315E-09	2.9341E-05	9.7384E-05
C-	8.9493E-06	2.1625E-05	1.6833E-05
CO	9.9525E-04	2.0028E-05	7.9387E-06
CO+	6.0754E-05	2.9561E-05	1.8699E-05
CC2	6.2409E-09	6.2142E-11	1.5572E-11
C2	1.6443E-05	1.1671E-06	4.8516E-07

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1902E+03	3.0481E+04	4.1085E+04
T	3.9825E+01	6.5494E+01	7.2303E+01
RHC	1.6318E+01	1.0466E+02	1.1827E+02
H	-6.5559E+00	-1.3075E+01	-1.5376E+01
A	1.1257E+01	1.6686E+01	1.8345E+01
S	2.8154E+00	3.0902E+00	3.2061E+00
Z	3.3703E+00	4.4469E+00	4.8046E+00
GAME	9.4413E-01	9.5596E-01	9.6881E-01
U	3.9945E+01	6.2409E+00	6.3924E+00

SPECIES	MOLE FRACTIONS		
E-	1.1045E-01	3.2552E-01	3.7572E-01
O	5.7252E-01	2.7820E-01	1.9736E-01
C+	2.0412E-02	1.7138E-01	2.1878E-01
O++	2.8882E-12	1.1017E-06	7.8059E-06
C-	3.4265E-05	1.0051E-04	7.6666E-05
O2	1.0214E-05	3.7882E-06	1.7781E-06
O2+	2.9604E-06	1.0887E-05	8.6092E-06
O2-	1.3264E-09	3.8281E-09	2.0208E-09
C	2.0611E-01	7.0567E-02	5.1216E-02
C+	9.0027E-02	1.5410E-01	1.5660E-01
C++	3.3805E-08	5.7039E-05	1.9213E-04
C-	9.1356E-06	1.7261E-05	1.2488E-05
CO	3.7151E-04	1.0878E-05	3.9233E-06
CC+	4.7709E-05	2.1533E-05	1.2521E-05
CO2	1.5926E-09	2.4308E-11	5.1064E-12
C2	7.8844E-06	6.3728E-07	2.4136E-07

P1 = 1.00E+02 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5831E+03	3.4950E+04	4.7492E+04
T	4.4422E+01	7.1895E+01	8.0904E+01
RHC	1.5916E+01	9.9924E+01	1.1163E+02
H	-7.5254E+00	-1.5593E+01	-1.8409E+01
A	1.2321E+01	1.8414E+01	2.0569E+01
S	2.9499E+00	3.2442E+00	3.3707E+00
Z	3.6535E+00	4.8649E+00	5.2587E+00
GAME	9.3689E-01	9.6942E-01	9.9445E-01
U	4.3345E+01	6.9140E+00	7.2040E+00

SPECIES	MOLE FRACTIONS		
E-	1.7912E-01	3.8345E-01	4.2961E-01
O	4.9822E-01	1.8627E-01	1.1035E-01
C+	4.9023E-02	2.2474E-01	2.6985E-01
O++	1.5813E-10	8.2069E-06	6.7483E-05
C-	3.6758E-05	6.4165E-05	3.6960E-05
O2	5.2371E-06	1.3759E-06	4.2134E-07
O2+	3.5835E-06	7.2748E-06	4.2678E-06
O2-	8.9790E-10	1.3829E-09	4.3883E-10
C	1.4335E-01	4.6894E-02	3.1226E-02
C+	1.3011E-01	1.5834E-01	1.5802E-01
C++	3.9157E-07	2.0441E-04	8.1621E-04
C-	7.8904E-06	1.0190E-05	5.8736E-06
CO	8.2066E-05	2.9915E-06	7.5661E-07
CC+	3.0377E-05	1.0461E-05	4.6516E-06
CO2	1.9962E-10	3.2176E-12	3.6571E-13
C2	2.2381E-06	1.7861E-07	4.8402E-08

P1 = 1.00E+02 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3823E+03	3.2604E+04	4.4094E+04
T	4.2242E+01	6.8598E+01	7.6274E+01
RHC	1.6068E+01	1.0208E+02	1.1486E+02
H	-7.2263E+00	-1.4307E+01	-1.6848E+01
A	1.1802E+01	1.7525E+01	1.9394E+01
S	2.8834E+00	3.1681E+00	3.2888E+00
Z	3.5097E+00	4.6560E+00	5.0331E+00
GAME	9.3952E-01	9.6164E-01	9.7977E-01
U	4.1639E+01	6.5648E+00	6.7707E+00

SPECIES	MOLE FRACTIONS		
E-	1.4557E-01	3.5580E-01	4.0405E-01
O	5.3628E-01	2.3062E-01	1.5169E-01
O+	3.3302E-02	1.9880E-01	2.4558E-01
O++	2.6460E-11	3.0725E-06	2.2514E-05
C-	3.6243E-05	8.1974E-05	5.5579E-05
O2	7.1771E-06	2.3423E-06	9.2357E-07
O2+	3.3213E-06	9.1154E-06	6.3482E-06
O2-	1.0934E-09	2.3769E-09	1.0174E-09
C	1.7230E-01	5.7689E-02	4.0496E-02
C+	1.1227E-01	1.5685E-01	1.5770E-01
C++	1.3248E-07	1.0873E-04	3.8644E-04
C-	8.6669E-06	1.3439E-05	8.8589E-06
CO	1.6516E-04	5.7793E-06	1.8170E-06
CO+	3.7968E-05	1.5236E-05	7.9431E-06
CO2	5.2171E-10	9.0668E-12	1.4987E-12
C2	4.0874E-06	3.4105E-07	1.1342E-07

P1 = 1.00E+02 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7924E+03	3.7377E+04	5.1121E+04
T	4.6490E+01	7.5502E+01	8.6489E+01
RHC	1.5786E+01	9.7591E+01	1.0798E+02
H	-8.6531E+00	-1.6932E+01	-2.0063E+01
A	1.2864E+01	1.9372E+01	2.1895E+01
S	3.0174E+00	3.3195E+00	3.4517E+00
Z	3.8051E+00	5.0727E+00	5.4737E+00
GAME	9.2542E-01	9.7980E-01	1.0117E+00
U	4.5057E+01	7.2993E+00	7.7062E+00

SPECIES	MOLE FRACTIONS		
E-	2.1177E-01	4.0870E-01	4.5201E-01
O	4.5783E-01	1.4530E-01	7.4812E-02
C+	6.7668E-02	2.4888E-01	2.9032E-01
O++	7.3557E-10	2.1726E-05	2.1720E-04
C-	3.6093E-05	4.7441E-05	2.1874E-05
O2	3.8528E-06	7.4619E-07	1.6085E-07
O2+	3.7345E-06	5.4533E-06	2.5378E-06
O2-	7.2438E-10	7.2856E-10	1.5285E-10
C	1.1850E-01	3.7608E-02	2.3186E-02
C+	1.4411E-01	1.5904E-01	1.5756E-01
C++	9.8148E-07	3.8880E-04	1.8594E-03
C-	6.9722E-06	7.4048E-06	3.5336E-06
CO	4.3049E-05	1.4617E-06	2.6978E-07
CO+	2.4134E-05	6.8442E-06	2.4331E-06
CO2	8.1967E-11	1.0299E-12	6.8575E-14
C2	1.2525E-06	8.8816E-08	1.7860E-08

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1= 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0102E+03	3.9953E+04	5.5109E+04
T	4.8419E+01	7.9626E+01	9.3281E+01
RHO	1.5709E+01	9.5093E+01	1.0426E+02
H	-9.4095E+00	-1.8321E+01	-2.1817E+01
A	1.3385E+01	2.0429E+01	2.3251E+01
S	3.0831E+00	3.3941E+00	3.5308E+00
Z	3.9576E+00	5.2765E+00	5.6665E+00
GAME	9.3494E-01	9.9330E-01	1.0227E+00
U	4.6773E+01	7.7315E+00	8.2860E+00

SPECIES	MOLE FRACTIONS		
E-	2.4212E-01	4.3153E-01	4.7065E-01
O	4.1732E-01	1.0818E-01	4.7410E-02
O+	8.7951E-02	2.7076E-01	3.0478E-01
O++	2.7154E-09	5.9253E-05	7.4393E-04
C-	3.4615E-05	3.2551E-05	1.1493E-05
C2	2.8655E-06	3.6194E-07	5.1264E-08
O2+	3.7693E-06	3.7745E-06	1.3290E-06
O2-	5.7937E-10	3.3543E-10	4.2865E-11
C	9.8234E-02	2.9509E-02	1.6526E-02
C+	1.5418E-01	1.5915E-01	1.5535E-01
C++	2.1259E-06	7.6976E-04	4.5229E-03
C-	6.0783E-06	5.0723E-06	1.9143E-06
CO	2.3967E-05	6.5178E-07	8.1869E-08
CC+	1.9193E-05	4.1809E-06	1.1267E-06
CC2	3.6344E-11	2.8106E-13	9.8314E-15
C2	7.2887E-07	4.0630E-08	5.6253E-09

P1 = 1.00E+02 N/SQ-M, US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2363E+03	4.2569E+04	5.9285E+04
T	5.0287E+01	8.4350E+01	1.0078E+02
RHO	1.5642E+01	9.2344E+01	1.0086E+02
H	-1.0194E+01	-1.9758E+01	-2.3651E+01
A	1.3911E+01	2.1565E+01	2.4409E+01
S	3.1490E+00	3.4656E+00	3.6071E+00
Z	4.1143E+00	5.4651E+00	5.8323E+00
GAME	9.3531E-01	1.0088E+00	1.0136E+00
U	4.8491E+01	8.2245E+00	8.8885E+00

SPECIES	MOLE FRACTIONS		
E-	2.7099E-01	4.5115E-01	4.8570E-01
C	2.7633E-01	7.6780E-02	2.9803E-02
O+	1.0970E-01	2.8898E-01	3.1074E-01
O++	8.6575E-09	1.6600E-04	2.3677E-03
C-	3.2460E-05	2.0586E-05	5.8222E-06
O2	2.1188E-06	1.5565E-07	1.5654E-08
O2+	3.6897E-06	2.3956E-06	6.6152E-07
O2-	4.5419E-10	1.3329E-10	1.1346E-11
C	8.1612E-02	2.2629E-02	1.1600E-02
C+	1.6129E-01	1.5868E-01	1.4933E-01
C++	4.2096E-06	1.5865E-03	1.0449E-02
C-	5.2294E-06	3.2536E-06	9.9323E-07
CO	1.3732E-05	2.6320E-07	2.3942E-08
CC+	1.5155E-05	2.3699E-06	4.9687E-07
CC2	1.6640E-11	6.4642E-14	1.3372E-15
C2	4.3171E-07	1.6958E-08	1.6768E-09

P1 = 1.00E+02 N/SQ-M, US1= 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4706E+03	4.5195E+04	6.3559E+04
T	5.2114E+01	8.9978E+01	1.0784E+02
RHO	1.5581E+01	8.9098E+01	9.8526E+01
H	-1.1006E+01	-2.1241E+01	-2.5533E+01
A	1.4443E+01	2.2762E+01	2.5320E+01
S	3.214E+00	3.5364E+00	3.6794E+00
Z	4.274E+00	5.6375E+00	5.9822E+00
GAME	9.364E-01	1.0214E+00	9.9377E-01
U	5.0214E+01	8.7331E+00	9.4354E+00

SPECIES	MOLE FRACTIONS		
E-	2.9826E-01	4.6793E-01	4.9858E-01
O	3.2501E-01	5.1345E-02	2.0184E-02
O+	1.2224E-01	3.0291E-01	3.0822E-01
O++	2.4616E-08	4.9359E-04	5.9230E-03
C-	2.9809E-05	1.1739E-05	3.2502E-06
C2	1.5499E-06	5.7175E-08	5.6750E-09
O2+	3.3094E-10	1.3631E-06	3.5822E-07
O2-	3.4845E-10	4.3769E-11	3.6517E-12
C	6.7802E-02	1.6735E-02	8.3986E-03
C+	1.6002E-01	1.5709E-01	1.3886E-01
C++	7.7506E-06	3.4775E-03	1.9835E-02
C-	4.4522E-06	1.9058E-06	5.5280E-07
CC	8.023E-06	9.2259E-08	8.2375E-09
CC+	1.1673E-05	1.2103E-06	2.3751E-07
CC2	7.7511E-12	1.1728E-14	2.4163E-16
C2	2.5928E-07	6.1088E-09	5.6868E-10

P1 = 1.00E+02 N/SQ-M, US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.7130E+03	4.7864E+04	6.7832E+04
T	5.3929E+01	9.6179E+01	1.1393E+02
RHO	1.5517E+01	8.6040E+01	9.7150E+01
H	-1.1850E+01	-2.2773E+01	-2.7433E+01
A	1.4986E+01	2.3820E+01	2.6138E+01
S	3.2807E+00	3.6032E+00	3.7480E+00
Z	4.4370E+00	5.7840E+00	6.1284E+00
GAME	9.3849E-01	1.0200E+00	9.7848E-01
U	5.1920E+01	9.3761E+00	9.8682E+00

SPECIES	MOLE FRACTIONS		
E-	2.2399E-01	4.8140E-01	5.1055E-01
O	2.9563E-01	3.3821E-02	1.4908E-02
O+	1.5507E-01	3.1055E-01	2.9985E-01
O++	6.4217E-08	1.4088E-03	1.1585E-02
C-	2.6755E-05	6.4251E-06	2.0620E-06
C2	1.1147E-06	1.9924E-08	2.5517E-09
O2+	3.2405E-10	7.3837E-07	2.1696E-07
O2-	2.5906E-10	1.3417E-11	1.5086E-12
C	5.6277E-02	1.2221E-02	6.3523E-03
C+	1.6892E-01	1.5314E-01	1.2597E-01
C++	1.3746E-05	7.4522E-03	3.0781E-02
C-	3.7499E-06	1.0715E-06	3.4130E-07
CC	4.7312E-06	3.0976E-08	3.4816E-09
CC+	5.2073E-06	5.9071E-07	1.2749E-07
CC2	3.6168E-12	1.9867E-15	6.2036E-17
C2	1.5682E-07	2.1295E-09	2.2087E-10

TABLE I.- Continued

$$p_1 = 100 \text{ N/m}^2$$

P1 = 1.00E+02 N/SQ-M, US1 = 1.55E+04 M/SEC

P1 = 1.00E+02 N/SQ-M, US1 = 1.60E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9633E+03	5.0585E+04	7.2107E+04
T	5.5762E+01	1.0245E+02	1.1927E+02
RHO	1.5444E+01	8.3438E+01	9.6315E+01
H	-1.2720E+01	-2.4356E+01	-2.9368E+01
A	1.5543E+01	2.4669E+01	2.6936E+01
S	3.3464E+00	3.6683E+00	3.8145E+00
Z	4.6022E+00	5.9159E+00	6.2770E+00
GAME	9.4137E-01	1.0041E+00	9.6914E-01
U	5.3640E+01	9.9379E+00	1.0237E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2213E+03	5.3388E+04	7.6361E+04
T	5.7644E+01	1.0820E+02	1.2409E+02
RHO	1.5355E+01	8.1638E+01	9.5713E+01
H	-1.5619E+01	-2.5992E+01	-3.1345E+01
A	1.6126E+01	2.5403E+01	2.7729E+01
S	3.4120E+00	3.7316E+00	3.8800E+00
Z	4.7651E+00	6.0440E+00	6.4292E+00
GAME	9.4526E-01	9.8677E-01	9.6274E-01
U	5.5348E+01	1.0424E+01	1.0566E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.4825E-01	4.9297E-01	5.2213E-01
C	2.5677E-01	2.2974E-02	1.1657E-02
O+	1.7777E-01	3.1156E-01	2.8780E-01
O++	1.5757E-07	3.5319E-03	1.9169E-02
G-	2.3536E-05	3.6261E-06	1.4288E-06
C2	7.8285E-07	7.3808E-09	1.3284E-09
O2+	2.9052E-06	4.0773E-07	1.4190E-07
O2-	1.8724E-10	4.3968E-12	7.3943E-13
C	4.6707E-02	8.9910E-03	4.9528E-03
C+	1.7045E-01	1.4559E-01	1.1258E-01
C++	2.3508E-05	1.4377E-02	4.1713E-02
C-	3.1187E-06	6.1113E-07	2.2706E-07
CO	2.7854E-06	1.1012E-08	1.6957E-09
CC+	7.0425E-06	2.9316E-07	7.4457E-08
CC2	1.6681E-12	3.7382E-16	2.0264E-17
C2	9.4716E-08	7.6022E-10	1.0658E-10

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.7106E-01	5.0372E-01	5.3345E-01
C	2.1951E-01	1.6671E-02	9.4228E-03
O+	2.0002E-01	3.0693E-01	2.7324E-01
O++	3.7113E-07	7.3011E-03	2.8416E-02
C-	2.0139E-05	2.2452E-06	1.0444E-06
C2	5.3257E-07	3.2018E-09	7.5517E-10
O2+	2.5224E-06	2.4396E-07	9.6946E-08
O2-	1.2949E-10	1.7299E-12	4.0182E-13
C	3.8566E-02	6.8113E-03	3.9349E-03
C+	1.7097E-01	1.3495E-01	9.9702E-02
C++	3.9522E-05	2.3620E-02	5.1836E-02
C-	2.5530E-06	3.7372E-07	1.5844E-07
CO	1.6158E-06	4.5382E-09	9.0160E-10
CC+	5.2894E-06	1.5739E-07	4.5707E-08
CC2	7.4711E-13	9.0880E-17	7.6750E-18
C2	5.6657E-08	3.0639E-10	5.3433E-11

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0720E+00
KMU	6.1024E+00	1.9532E+01	2.7600E+01
M	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9204E+00
S	1.0709E+00	1.0834E+00	1.1010E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1123E-01
U	3.0950E+00	9.6609E-01	8.7896E-01

SPECIES		MOLE FRACTIONS	
E-	7.6040E-51	2.2687E-41	8.0065E-33
O	5.1498E-14	3.2926E-11	1.9150E-09
O+	3.1773E-37	2.1158E-33	1.4800E-30
O++	0.	0.	0.
U-	1.4790E-37	4.4950E-47	9.2518E-38
O2	4.3942E-04	4.3993E-04	4.4154E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0335E-51	4.9644E-42	3.7481E-34
C-	3.7314E-32	3.2770E-43	3.2747E-35
C+	2.0555E-62	4.6746E-54	1.2431E-46
C++	0.	0.	0.
C-	3.5303E-97	4.8584E-80	3.2639E-64
CO-	3.6131E-11	3.4782E-08	3.2518E-06
CO+	5.2706E-30	1.1547E-31	2.5050E-20
CO2	4.4956E-01	9.9956E-01	9.9950E-01
C2	2.2466E-70	1.9886E-63	1.5200E-51

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9459E+02	2.9085E+02
T	3.8892E+00	5.6597E+00	6.4204E+00
KMU	8.0418E+00	3.4340E+01	4.4990E+01
M	8.8932E-01	8.0781E-01	7.6504E-01
A	1.8839E+00	2.2523E+00	2.3859E+00
S	1.1319E+00	1.1575E+00	1.1784E+00
Z	1.0000E+00	1.0013E+00	1.0059E+00
GAME	9.1252E-01	8.9517E-01	8.8050E-01
U	4.5322E+00	1.0634E+00	9.8488E-01

SPECIES		MOLE FRACTIONS	
E-	7.0496E-34	5.4645E-19	1.0625E-10
O	1.1338E-09	2.7432E-06	3.8275E-05
O+	4.7730E-31	5.6769E-26	6.6608E-23
O++	0.	0.	2.7192E-91
U-	3.0111E-39	4.1291E-22	2.1009E-20
O2	4.4077E-04	1.7245E-03	6.2955E-04
O2+	1.7597E-18	1.2004E-18	1.1002E-16
O2-	1.1867E-35	1.0095E-20	2.0437E-18
C-	3.3061E-36	5.3930E-23	2.1847E-20
C+	1.5102E-47	4.3198E-35	8.6391E-31
C++	0.	3.8023E-84	2.7014E-74
C-	3.7917E-66	1.3173E-38	7.0286E-34
CO	1.7038E-06	2.5730E-03	1.1655E-02
CO+	6.3999E-29	4.3436E-24	1.8757E-21
CO2	4.9956E-01	9.9570E-01	9.8200E-01
C2	3.3864E-53	1.8267E-33	2.0591E-29

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2646E+01	1.2170E+02	1.9019E+02
T	3.1957E+00	4.5028E+00	5.2407E+00
KMU	7.1505E+00	2.7030E+01	3.6219E+01
M	9.1903E-01	8.6219E-01	8.2793E-01
A	1.7137E+00	2.0225E+00	2.1757E+00
S	1.1013E+00	1.1206E+00	1.1405E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1904E-01	9.0842E-01	9.0151E-01
U	3.8201E+00	1.0099E+00	9.3723E-01

SPECIES		MOLE FRACTIONS	
E-	6.1750E-41	2.9074E-25	2.0941E-21
O	4.7802E-12	1.1385E-08	5.3707E-07
O+	1.0924E-33	2.9042E-29	5.0232E-27
O++	0.	0.	0.
U-	7.8028E-47	1.5034E-29	3.1727E-25
O2	4.3942E-04	4.5422E-04	8.4339E-04
O2+	1.7597E-18	1.7596E-18	1.7611E-18
O2-	4.0053E-42	3.1035E-27	2.7160E-23
C-	6.2599E-43	1.7799E-28	2.1909E-25
C+	1.0700E-53	1.4404E-40	6.2174E-38
C++	0.	0.	1.4554E-91
C-	3.9205E-79	2.2680E-50	6.0232E-44
CO	8.3207E-09	2.8636E-05	8.0709E-04
CO+	7.2291E-32	1.4652E-26	1.6360E-24
CO2	9.9956E-01	9.9952E-01	9.9835E-01
C2	8.9408E-63	1.7070E-41	3.5219E-37

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1027E+01	2.8839E+02	4.1321E+02
T	4.6599E+00	6.7421E+00	7.3805E+00
KMU	8.8041E+00	4.2341E+01	5.4702E+01
M	8.5507E-01	7.4468E-01	6.9553E-01
A	2.0556E+00	2.4391E+00	2.5541E+00
S	1.1621E+00	1.1940E+00	1.2100E+00
Z	1.0001E+00	1.0102E+00	1.0235E+00
GAME	9.0675E-01	8.7345E-01	8.6354E-01
U	5.2493E+00	1.0930E+00	1.0042E+00

SPECIES		MOLE FRACTIONS	
E-	1.0270E-23	1.5546E-15	3.6811E-14
O	5.9718E-08	1.0774E-04	4.9299E-04
O+	1.5695E-28	1.0577E-21	6.7478E-20
O++	0.	1.0286E-90	1.5151E-80
U-	4.5296E-28	2.5964E-18	1.3190E-16
O2	5.0955E-04	1.0431E-02	2.2937E-02
O2+	1.7595E-18	1.6019E-15	3.8971E-14
O2-	4.1632E-26	4.3036E-17	1.5302E-15
C-	2.2783E-27	5.5607E-19	3.2926E-17
C+	9.8062E-40	6.2564E-30	1.8539E-27
C++	0.	1.1104E-73	1.6575E-65
C-	4.5874E-48	4.6652E-33	4.6188E-30
CO	1.3939E-04	2.0099E-02	4.5507E-02
CO+	5.6799E-26	7.8605E-20	4.0502E-16
CO2	4.9935E-01	9.6936E-01	9.3106E-01
C2	4.7835E-40	1.6842E-28	9.4174E-28

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M.} \quad U_1 = 1.80E+03 \text{ M/SEC}$
 $P_1 = 2.00E+02 \text{ N/SQ-M.} \quad U_1 = 2.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2134E+01	4.0726E+02	5.6100E+02
T	5.4759E+00	7.6117E+00	8.1397E+00
RHU	9.5075E+00	5.1848E+01	6.5425E+01
H	8.1624E-01	6.7247E-01	6.1694E-01
A	2.2152E+00	2.5995E+00	2.7105E+00
S	1.1915E+00	1.2313E+00	1.2547E+00
Z	1.0013E+00	1.0320E+00	1.0534E+00
GAME	8.9494E-01	8.6024E-01	8.5685E-01
U	5.9609E+00	1.0950E+00	1.0116E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4690E+01	5.5985E+02	7.4701E+02
T	6.2414E+00	8.3306E+00	8.7942E+00
RHU	1.0294E+01	6.3080E+01	7.7650E+01
H	7.7277E-01	5.9078E-01	5.2869E-01
A	2.3472E+00	2.7560E+00	2.8691E+00
S	1.2203E+00	1.2701E+00	1.2952E+00
Z	1.0069E+00	1.0653E+00	1.0934E+00
GAME	8.7668E-01	8.5581E-01	8.5570E-01
U	6.6822E+00	1.0925E+00	1.0201E+00

SPECIES	MOLE FRACTIONS		
E-	2.3104E-19	1.1336E-13	1.0748E-12
O	3.2073E-06	8.7431E-04	2.2601E-03
O+	2.9034E-20	2.6735E-19	1.5100E-17
U+	0.	2.5105E-77	6.8839E-75
U-	3.1370E-23	4.9810E-16	1.0460E-14
O2	1.7304E-03	3.0573E-02	4.8815E-02
O2+	1.9897E-18	1.1875E-13	1.1526E-12
O2-	1.2417E-21	4.9022E-15	6.3716E-14
C	7.7003E-24	1.3355E-16	4.2248E-15
C+	1.3579E-36	4.6162E-26	3.1299E-24
C+	0.	7.1784E-63	9.4062E-61
C-	3.3827E-41	1.0585E-28	7.7012E-27
CO	2.5853E-03	6.1168E-02	9.9054E-02
CO+	5.5551E-24	1.5952E-17	4.0150E-16
CO2	9.4568E-01	9.0738E-01	8.4987E-01
C2	2.0670E-35	2.7379E-25	4.1255E-23

SPECIES	MOLE FRACTIONS		
E-	6.5751E-17	2.3196E-12	1.0929E-11
O	5.4725E-05	3.3041E-03	6.4177E-03
O+	8.6174E-23	4.6843E-17	4.7150E-16
U+	8.5413E-93	1.873E-72	1.0106E-68
U-	3.4541E-20	2.6229E-14	1.9359E-13
O2	7.2423E-03	5.8443E-02	7.9383E-02
O2+	6.7796E-17	2.4832E-12	1.1921E-11
O2-	3.2901E-19	1.3850E-13	8.0743E-13
C	2.2242E-20	1.1793E-14	1.0204E-13
C+	6.0100E-31	1.4775E-23	3.6535E-22
C+	2.3806E-75	6.9797E-59	8.5184E-58
C-	1.5623E-34	3.8877E-26	1.3105E-24
CO	1.3666E-02	1.1936E-01	1.6438E-01
CO+	2.4438E-21	1.0753E-15	8.4990E-15
CO2	9.7904E-01	8.1889E-01	7.4942E-01
C2	6.2105E-30	1.6566E-22	3.5265E-21

 $P_1 = 2.00E+02 \text{ N/SQ-M.} \quad U_1 = 2.20E+03 \text{ M/SEC}$
 $P_1 = 2.00E+02 \text{ N/SQ-M.} \quad U_1 = 2.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6701E+01	7.5646E+02	9.8507E+02
T	6.8702E+00	8.9698E+00	9.4140E+00
RHU	1.1229E+01	7.6102E+01	9.1599E+01
H	7.2463E-01	4.9937E-01	4.3002E-01
A	2.4593E+00	2.9167E+00	3.0364E+00
S	1.2494E+00	1.3107E+00	1.3377E+00
Z	1.0197E+00	1.1083E+00	1.1425E+00
GAME	8.6241E-01	8.5579E-01	8.5730E-01
U	7.4150E+00	1.0962E+00	1.0355E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4288E+01	1.0018E+03	1.2812E+03
T	7.3993E+00	9.5734E+00	1.0010E+01
RHU	1.2262E+01	9.0274E+01	1.0663E+02
H	6.7187E-01	3.9844E-01	3.2092E-01
A	2.5041E+00	3.0858E+00	3.2155E+00
S	1.2791E+00	1.3530E+00	1.3821E+00
Z	1.0393E+00	1.1593E+00	1.1994E+00
GAME	8.5495E-01	8.5795E-01	8.6050E-01
U	8.1503E+00	1.1098E+00	1.0593E+00

SPECIES	MOLE FRACTIONS		
E-	6.9981E-15	1.8331E-11	6.7409E-11
O	3.7589E-04	8.4770E-03	1.4179E-02
O+	5.2850E-21	7.2452E-16	7.1302E-15
U+	6.5245E-86	2.2843E-65	1.9800E-64
U-	7.3007E-18	3.4091E-13	1.9037E-12
O2	1.9342E-02	8.9614E-02	1.1081E-01
O2+	1.0873E-15	2.0034E-11	7.5133E-11
O2-	8.0481E-17	1.3773E-12	5.8429E-12
C	2.2377E-18	1.7317E-13	1.2620E-12
C+	6.8748E-29	2.6758E-22	1.5031E-20
C+	9.7752E-70	4.2148E-53	2.7020E-52
C-	3.7253E-32	1.3119E-24	7.0530E-23
CO	3.8197E-02	1.8691E-01	2.3502E-01
CO+	3.3161E-19	1.4648E-14	9.5556E-14
CO2	9.4209E-01	7.1500E-01	6.3999E-01
C2	2.2049E-28	2.6019E-21	1.1592E-19

SPECIES	MOLE FRACTIONS		
E-	1.1033E-13	1.0252E-10	3.1245E-10
U	1.3572E-03	1.7571E-02	2.6920E-02
O+	4.0961E-19	9.9566E-15	7.3252E-14
U+	5.9258E-80	1.0847E-60	2.3720E-60
O-	2.5273E-16	3.0367E-12	1.2900E-11
O2	3.6916E-02	1.2023E-01	1.3971E-01
O2+	1.1224E-13	1.1436E-10	3.5437E-10
O2-	1.6651E-15	8.9645E-12	2.9438E-11
C	1.1170E-16	1.9431E-12	1.0701E-11
C+	1.4071E-27	1.1518E-20	3.7325E-19
C+	6.9798E-65	2.7466E-49	1.4736E-49
C-	1.2890E-30	4.5172E-23	2.1463E-21
CO	7.4343E-02	2.5726E-01	3.0501E-01
CO+	1.3251E-17	1.4852E-13	7.4993E-13
CO2	8.6738E-01	6.0494E-01	5.2176E-01
C2	3.2444E-26	9.0682E-20	2.3229E-18

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad U_{S1} = 2.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1120E+02	1.2970E+03	1.6307E+03
T	7.8425E+00	1.0163E+01	1.0623E+01
RHO	1.3325E+01	1.0481E+02	1.2189E+02
M	6.1451E-01	2.8830E-01	2.0154E-01
A	2.6669E+00	3.2652E+00	3.4081E+00
S	1.3094E+00	1.3971E+00	1.4283E+00
Z	1.0048E+00	1.2177E+00	1.2641E+00
GAME	8.5175E-01	8.6152E-01	8.6503E-01
U	8.8984E+00	1.1331E+00	1.0920E+00

SPECIES	MOLE FRACTIONS		
E-	7.9726E-13	4.3912E-10	1.1980E-09
O	3.4258E-03	3.1883E-02	4.6260E-02
O+	6.4735E-18	9.8252E-14	5.9269E-13
U+	1.3671E-74	4.3671E-57	1.4568E-56
O-	2.9797E-15	1.8911E-11	6.7794E-11
O2	5.7817E-02	1.4723E-01	1.6300E-01
O2+	6.1454E-13	4.9857E-10	1.3797E-09
U2-	1.4475E-14	4.1737E-11	1.1062E-10
C	1.5551E-15	1.5676E-11	7.2818E-11
C+	5.1303E-25	7.3931E-20	6.9875E-18
C-	1.7825E-60	2.5334E-46	3.0242E-40
C-	5.0591E-60	3.3441E-22	4.6040E-20
CO	1.1824E-01	3.2561E-01	3.7150E-01
CO+	1.6615E-16	1.0904E-12	4.7089E-12
CO2	8.4205E-01	4.9528E-01	4.1918E-01
CZ	4.7546E-25	2.2666E-18	3.4135E-17

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad U_{S1} = 3.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4938E+02	2.0325E+03	2.5244E+03
T	8.6043E+00	1.1364E+01	1.1904E+01
RHO	1.5367E+01	1.3209E+02	1.4990E+02
M	4.8005E-01	4.1140E-02	-6.8076E-02
A	2.8764E+00	3.6625E+00	3.8432E+00
S	1.3748E+00	1.4896E+00	1.5294E+00
Z	1.1296E+00	1.3541E+00	1.4147E+00
GAME	8.5123E-01	8.7171E-01	8.7706E-01
U	1.0378E+01	1.2092E+00	1.1861E+00

SPECIES	MOLE FRACTIONS		
E-	1.5378E-11	5.0915E-09	1.2346E-08
O	1.2536E-02	8.2083E-02	1.1171E-01
O+	8.2001E-16	5.8057E-12	2.5356E-11
O+	1.3907E-69	4.3826E-52	4.3390E-51
O-	1.3052E-13	3.7768E-10	1.0992E-09
O2	1.0259E-01	1.7975E-01	1.8175E-01
O2+	1.5840E-11	5.8918E-09	1.4360E-08
O2-	3.4175E-13	4.6296E-10	1.0710E-09
C	1.1336E-13	5.7551E-10	2.1854E-09
C+	4.5722E-22	1.6343E-16	1.5187E-15
C+	2.7818E-56	2.5860E-42	5.6751E-41
C-	4.9560E-25	1.1460E-18	1.0454E-17
CO	2.1693E-01	4.4093E-01	4.7659E-01
CO+	9.5543E-15	3.4520E-11	1.2435E-10
CO2	6.6795E-01	2.9724E-01	2.3195E-01
CZ	1.6109E-21	5.9176E-16	4.1373E-15

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad U_{S1} = 2.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2903E+02	1.6415E+03	2.0522E+03
T	8.2370E+00	1.0756E+01	1.1248E+01
RHO	1.4374E+01	1.1899E+02	1.3650E+02
M	5.5256E-01	1.6915E-01	7.1774E-02
A	2.7700E+00	3.4569E+00	3.6169E+00
S	1.3415E+00	1.4427E+00	1.4762E+00
Z	1.0949E+00	1.2827E+00	1.3306E+00
GAME	8.5082E-01	8.6616E-01	8.7055E-01
U	9.6394E+00	1.1662E+00	1.1306E+00

SPECIES	MOLE FRACTIONS		
E-	4.0723E-12	1.5830E-09	4.0409E-09
O	6.9883E-03	5.2880E-02	7.3990E-02
O+	1.0633E-16	7.9629E-13	4.1029E-12
O+	1.1309E-73	3.5140E-54	1.6843E-53
O-	2.4079E-14	9.2293E-11	2.9500E-10
O2	8.0056E-02	1.6787E-01	1.7783E-01
O2+	4.1788E-12	1.8208E-09	4.6942E-09
O2-	8.3549E-14	1.5283E-10	3.8802E-10
C	1.7598E-14	9.9980E-11	4.2130E-10
C+	2.4955E-23	4.3509E-18	1.0967E-16
C+	1.5334E-59	6.2909E-44	4.5969E-44
C-	2.2399E-26	4.1566E-20	7.6866E-19
CO	1.6630E-01	3.8793E-01	4.2900E-01
CO+	1.6175E-15	6.4810E-12	2.5552E-11
CO2	7.4066E-01	3.9132E-01	3.1918E-01
CZ	1.1434E-22	4.0908E-17	4.0625E-16

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad U_{S1} = 3.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7050E+02	2.4702E+03	3.0560E+03
T	8.9497E+00	1.2000E+01	1.2605E+01
RHO	1.6308E+01	1.4381E+02	1.6180E+02
M	4.1496E-01	-9.5677E-02	-2.1848E-01
A	2.9855E+00	3.8839E+00	4.0900E+00
S	1.4090E+00	1.5375E+00	1.5758E+00
Z	1.1682E+00	1.4315E+00	1.5002E+00
GAME	8.5254E-01	8.7816E-01	8.8462E-01
U	1.1114E+01	1.2622E+00	1.2478E+00

SPECIES	MOLE FRACTIONS		
E-	4.5722E-11	1.4727E-08	3.5001E-08
O	2.0461E-02	1.2075E-01	1.6044E-01
O+	3.8482E-15	3.3793E-11	1.4529E-10
O+	4.9318E-66	3.0365E-50	2.7207E-47
O-	4.9451E-13	1.3084E-09	3.5956E-09
O2	1.2391E-01	1.8097E-01	1.7328E-01
O2+	4.7253E-11	1.7034E-08	4.0420E-08
O2-	1.0790E-12	1.1907E-09	2.5350E-09
C	4.8567E-13	2.8059E-09	1.0611E-08
C+	3.0125E-21	2.2273E-15	1.9636E-14
C+	1.5074E-53	2.5542E-41	4.1746E-38
C-	3.7313E-24	1.4688E-17	1.2227E-16
CO	2.0753E-01	4.8208E-01	5.0642E-01
CO+	3.8819E-14	1.5793E-10	5.6882E-10
CO2	5.8810E-01	2.1619E-01	1.5986E-01
CZ	1.0518E-20	5.6538E-15	3.8317E-14

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9297E+02	2.9490E+03	3.6422E+03
T	9.2859E+00	1.2672E+01	1.3366E+01
RHO	1.7167E+01	1.5366E+02	1.7115E+02
H	3.3930E-01	-2.4117E-01	-3.7959E-01
A	3.0991E+00	4.1225E+00	4.3604E+00
S	1.4445E+00	1.5861E+00	1.6270E+00
Z	1.2105E+00	1.5144E+00	1.5921E+00
GAME	8.5443E-01	8.8552E-01	8.9347E-01
U	1.1848E+01	1.3254E+00	1.3209E+00

SPECIES	MOLE FRACTIONS		
E-	1.2447E-10	3.9411E-08	9.3370E-08
O	3.1303E-02	1.6931E-01	2.1905E-01
O+	1.8193E-14	1.7838E-10	7.9105E-10
O++	7.4465E-63	3.8110E-47	3.3329E-44
O-	1.6983E-12	3.9712E-09	1.0431E-08
O2	1.4298E-01	1.7068E-01	1.5252E-01
O2+	1.2900E-10	4.5169E-08	1.0505E-07
O2-	2.9947E-12	2.6345E-09	5.1439E-09
C	1.9944E-12	1.2637E-08	4.9914E-08
C+	2.6544E-20	2.6052E-14	2.4817E-13
C++	5.6709E-51	6.3181E-38	1.7134E-35
C-	3.7147E-23	1.5249E-16	1.2795E-15
CO	3.1653E-01	5.1008E-01	5.2413E-01
CO+	1.4980E-13	6.6913E-10	2.5057E-09
CO2	5.0919E-01	1.4993E-01	1.0370E-01
C2	7.6467E-20	4.7279E-14	3.3948E-13

P1 = 2.00E+02 N/SQ-M, US1 = 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1680E+02	3.4650E+03	4.2808E+03
T	9.6179E+00	1.3396E+01	1.4217E+01
RHO	1.7939E+01	1.6141E+02	1.7822E+02
H	2.5907E-01	-3.9526E-01	-5.5176E-01
A	3.2177E+00	4.3809E+00	4.6610E+00
S	1.4806E+00	1.6351E+00	1.6788E+00
Z	1.2564E+00	1.6025E+00	1.6895E+00
GAME	8.5680E-01	8.9404E-01	9.0447E-01
U	1.2578E+01	1.3998E+00	1.4077E+00

SPECIES	MOLE FRACTIONS		
E-	3.1125E-10	9.8802E-08	2.3820E-07
O	4.5605E-02	2.2684E-01	2.8698E-01
O+	8.1125E-14	8.6455E-10	4.1252E-09
O++	6.8472E-62	9.4305E-45	8.6740E-42
O-	5.1961E-12	1.0699E-08	2.7160E-08
O2	1.5885E-01	1.4943E-01	1.2138E-01
O2+	3.2320E-10	1.1099E-07	2.5929E-07
O2-	7.3603E-12	5.0390E-09	8.9172E-09
C	7.5553E-12	5.3687E-08	2.3289E-07
C+	2.6696E-19	2.6580E-13	2.9402E-12
C++	5.7393E-50	8.6627E-36	2.5114E-33
C-	3.8046E-22	1.3274E-15	1.1980E-14
CO	3.6260E-01	5.2514E-01	5.2923E-01
CO+	5.3277E-13	2.6851E-09	1.0939E-08
CO2	4.3295E-01	9.8592E-02	6.2401E-02
C2	5.3551E-19	3.5564E-13	2.9070E-12

P1 = 2.00E+02 N/SQ-M, US1 = 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4196E+02	4.0136E+03	4.9711E+03
T	9.9495E+00	1.4195E+01	1.5229E+01
RHO	1.8624E+01	1.6684E+02	1.8231E+02
H	1.7427E-01	-5.3787E-01	-7.3577E-01
A	3.3419E+00	4.6647E+00	5.0091E+00
S	1.5179E+00	1.6843E+00	1.7309E+00
Z	1.3058E+00	1.6948E+00	1.7905E+00
GAME	8.5900E-01	9.0453E-01	9.2020E-01
U	1.3306E+01	1.4872E+00	1.5134E+00

SPECIES	MOLE FRACTIONS		
E-	7.0001E-10	2.3829E-07	6.1665E-07
O	6.3932E-02	2.9074E-01	3.5811E-01
O+	2.6901E-13	4.1751E-09	2.4008E-08
O++	6.1968E-59	5.9594E-43	1.7997E-38
O-	1.3675E-11	2.6069E-08	6.5507E-08
O2	1.7060E-01	1.1946E-01	8.3619E-02
O2+	7.2804E-10	2.5756E-07	6.1665E-07
O2-	1.6184E-11	8.2990E-09	1.3001E-08
C	2.3033E-11	2.3283E-07	1.2712E-06
C+	1.1623E-18	2.9290E-12	4.9481E-11
C++	1.0792E-47	1.1222E-33	1.8094E-30
C-	1.8327E-21	1.1283E-14	1.3209E-13
CO	4.0447E-01	5.2915E-01	5.2480E-01
CO+	1.5600E-12	1.0917E-08	5.4536E-08
CO2	3.6100E-01	6.0649E-02	3.3404E-02
C2	2.2800E-18	2.7888E-12	3.2381E-11

P1 = 2.00E+02 N/SQ-M, US1 = 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0846E+02	4.5854E+03	5.7109E+03
T	1.0280E+01	1.5125E+01	1.6602E+01
RHO	1.9209E+01	1.6947E+02	1.8209E+02
H	8.4902E-02	-7.2883E-01	-9.3339E-01
A	3.4724E+00	4.9869E+00	5.4543E+00
S	1.5501E+00	1.7332E+00	1.7828E+00
Z	1.3986E+00	1.7889E+00	1.8892E+00
GAME	8.6279E-01	9.1912E-01	9.4854E-01
U	1.4030E+01	1.5923E+00	1.6502E+00

SPECIES	MOLE FRACTIONS		
E-	1.5359E-09	5.7455E-07	1.8371E-06
O	8.0824E-02	3.5707E-01	4.2652E-01
O+	1.0066E-12	2.1413E-08	1.7954E-07
O++	5.1612E-58	5.2869E-39	6.6052E-35
O-	3.4021E-11	5.8706E-08	1.5783E-07
O2	1.7745E-01	8.4178E-02	4.4388E-02
O2+	1.5970E-09	5.7498E-07	1.4620E-06
O2-	3.2929E-11	1.1656E-08	1.5532E-08
C	7.4217E-11	1.1232E-06	1.0075E-05
C+	8.9151E-18	4.0113E-11	1.4819E-09
C++	1.0025E-46	7.5301E-31	2.9368E-27
C-	1.3143E-20	1.0374E-13	2.1959E-12
CO	4.4107E-01	5.2494E-01	5.1481E-01
CO+	4.7088E-12	4.8479E-08	3.6766E-07
CO2	2.9466E-01	3.3809E-02	1.4270E-02
C2	1.2382E-17	2.5947E-11	6.2232E-10

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9627E+02	5.1707E+03	6.5169E+03
T	1.0631E+01	1.6326E+01	1.8997E+01
RHD	1.9699E+01	1.6848E+02	1.7444E+02
M	-9.0304E-03	-9.0788E-01	-1.1521E+00
A	3.6096E+00	5.3817E+00	6.1302E+00
S	1.5950E+00	1.7812E+00	1.8344E+00
Z	1.4147E+00	1.8799E+00	1.9672E+00
GAME	6.6634E-01	9.4370E-01	1.0056E+00
U	1.4752E+01	1.7269E+00	1.8751E+00

SPECIES	MOLE FRACTIONS		
E-	3.1874E-09	1.5242E-06	1.0214E-05
O	1.1472E-01	4.2016E-01	4.7861E-01
O+	3.3649E-12	1.3189E-07	2.4097E-06
O++	1.2487E-55	1.4079E-35	5.9827E-30
O-	8.0595E-11	1.2914E-07	5.1830E-07
O2	1.7872E-01	4.8113E-02	1.3267E-02
O2+	3.3131E-09	1.2639E-06	3.2201E-06
O2-	6.1873E-11	1.3705E-08	1.5876E-08
C	2.1947E-10	7.1945E-06	2.2609E-04
C+	5.1121E-17	8.6354E-10	1.9763E-07
C++	9.0595E-45	7.8017E-28	1.1244E-42
C-	7.1697E-20	1.2900E-12	1.5243E-10
CO	4.7154E-01	5.1591E-01	5.0429E-01
CO+	1.3463E-11	2.7040E-07	4.9251E-06
CO2	2.3202E-01	1.5801E-02	3.6214E-03
C2	5.6136E-17	3.6762E-10	5.5912E-08

P1 = 2.00E+02 N/SQ-M, US1 = 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5584E+02	6.3032E+03	8.2124E+03
T	1.1358E+01	2.1008E+01	2.4374E+01
RHD	2.0391E+01	1.5060E+02	1.6400E+02
M	-2.1059E-01	-1.2876E+00	-1.6194E+00
A	3.9069E+00	6.4753E+00	6.7566E+00
S	1.6748E+00	1.8691E+00	1.9221E+00
Z	1.5364E+00	1.9923E+00	2.0540E+00
GAME	8.7465E-01	1.0018E+00	9.1107E-01
U	1.6186E+01	2.1941E+00	2.2974E+00

SPECIES	MOLE FRACTIONS		
E-	1.2206E-08	4.2877E-05	3.3375E-04
O	1.8611E-01	4.9343E-01	5.1132E-01
O+	3.1763E-11	1.1149E-05	5.2670E-05
O++	3.9065E-51	7.9034E-27	4.1884E-23
O-	3.6156E-10	1.2588E-06	6.2042E-06
O2	1.6331E-01	4.8023E-03	1.7145E-03
O2+	1.2617E-08	3.7756E-06	4.0003E-06
O2-	1.7622E-10	1.5095E-08	2.9837E-08
C	1.6623E-09	2.1294E-03	2.7850E-02
C+	1.2066E-15	5.2251E-06	1.6839E-04
C++	2.9469E-41	1.0583E-19	2.4790E-16
C-	1.5031E-18	3.4968E-09	2.2780E-07
CO	5.1217E-01	4.9831E-01	4.5799E-01
CO+	9.5309E-11	2.4005E-05	1.1515E-04
CO2	1.3841E-01	1.2381E-03	3.8644E-04
C2	9.0636E-16	1.3892E-06	6.0943E-05

P1 = 2.00E+02 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2541E+02	5.7498E+03	7.3824E+03
T	1.0947E+01	1.8168E+01	2.2423E+01
RHD	2.0094E+01	1.6199E+02	1.6411E+02
M	-1.0753E-01	-1.0944E+00	-1.3893E+00
A	3.7542E+00	5.9307E+00	6.5794E+00
S	1.6346E+00	1.8272E+00	1.8818E+00
Z	1.4740E+00	1.9538E+00	2.0002E+00
GAME	6.7028E-01	9.9094E-01	9.6223E-01
U	1.5471E+01	1.9211E+00	2.1508E+00

SPECIES	MOLE FRACTIONS		
E-	6.3042E-09	5.8712E-06	1.0194E-04
O	1.4789E-01	4.6985E-01	4.9050E-01
O+	1.0063E-11	1.1813E-06	2.3092E-05
O++	3.1937E-53	2.0287E-31	4.2850E-25
O-	1.7470E-10	3.3112E-07	2.5257E-06
O2	1.7398E-01	1.8539E-02	3.0700E-03
O2+	6.5419E-09	2.6200E-06	4.0850E-06
O2-	1.0829E-10	1.3727E-08	2.0581E-08
C	5.9761E-10	8.9990E-05	6.8070E-03
C+	2.1847E-16	4.9138E-08	2.5909E-05
C++	5.2119E-43	5.2119E-24	3.9080E-18
C-	3.0823E-19	3.8856E-11	2.2719E-08
CO	4.9524E-01	5.0630E-01	4.9057E-01
CO+	3.5307E-11	2.3656E-06	5.1420E-05
CO2	1.6290E-01	5.2173E-03	7.6774E-04
C2	2.1334E-16	1.4076E-08	7.9425E-06

P1 = 2.00E+02 N/SQ-M, US1 = 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8756E+02	6.8872E+03	9.0222E+03
T	1.1750E+01	2.3344E+01	2.5584E+01
RHD	2.0591E+01	1.4557E+02	1.6696E+02
M	-3.1821E-01	-1.4901E+00	-1.8505E+00
A	4.0688E+00	6.6303E+00	6.9703E+00
S	1.7154E+00	1.9073E+00	1.9605E+00
Z	1.6018E+00	2.0268E+00	2.1124E+00
GAME	8.7960E-01	9.2917E-01	8.9876E-01
U	1.6899E+01	2.3941E+00	2.3772E+00

SPECIES	MOLE FRACTIONS		
E-	2.3060E-08	1.9330E-04	6.3829E-04
O	2.2888E-01	5.0457E-01	5.2503E-01
O+	1.0100E-10	3.6494E-05	8.0287E-05
O++	6.5294E-50	4.4927E-24	4.7282E-22
O-	7.0980E-10	3.7268E-06	1.0589E-05
O2	1.4711E-01	2.0429E-03	1.3268E-03
O2+	2.3675E-08	3.7703E-06	4.0548E-06
O2-	2.6657E-10	2.0729E-08	4.0293E-08
C	4.7935E-09	1.5458E-02	5.3050E-02
C+	7.3973E-15	7.8777E-05	4.0245E-04
C++	6.6155E-40	3.7714E-17	1.9703E-15
C-	7.3554E-18	7.6036E-08	7.4151E-07
CO	5.2255E-01	4.7702E-01	4.1808E-01
CO+	2.5973E-10	8.0984E-05	1.6209E-04
CO2	1.0146E-01	4.8766E-04	2.6540E-04
C2	4.0132E-15	2.4715E-05	1.5489E-04

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.205E+02	7.511E+03	9.826E+03
T	1.2170E+01	2.4734E+01	2.652E+01
RHO	2.0694E+01	1.4622E+02	1.7011E+02
M	-4.3038E-01	-1.7025E+00	-2.0882E+00
A	4.2419E+00	6.8134E+00	7.1906E+00
S	1.7564E+00	1.9442E+00	1.9986E+00
Z	1.6698E+00	2.0768E+00	2.1778E+00
GAME	8.8542E-01	9.0370E-01	8.9507E-01
U	1.7607E+01	2.4962E+00	2.4383E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.2511E-08	4.4255E-04	1.0017E-03
O	2.7535E-01	5.1687E-01	5.3902E-01
O+	3.0813E-10	6.2053E-05	1.0938E-04
O++	5.8756E-48	9.4145E-23	2.7413E-21
O-	1.3233E-09	7.0860E-06	1.5637E-05
O2	1.2606E-01	1.4173E-03	1.1421E-03
O2+	4.3204E-08	3.7092E-06	4.2273E-06
O2-	3.7487E-10	2.8275E-08	5.1604E-08
C	1.3433E-08	3.7944E-02	8.1012E-02
C+	4.0031E-14	2.5290E-04	7.0440E-04
C++	3.1031E-38	5.5589E-16	8.2060E-15
C-	3.2454E-17	3.5206E-07	1.6188E-06
CO	5.2694E-01	4.4247E-01	3.7632E-01
CO+	6.9713E-10	1.3135E-04	2.0095E-04
CO2	7.1647E-02	3.0498E-04	1.9945E-04
C2	1.6803E-14	8.9390E-05	2.7021E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.9019E+02	8.7356E+03	1.1333E+04
T	1.3173E+01	2.6565E+01	2.8091E+01
RHO	2.0544E+01	1.4953E+02	1.7391E+02
M	-6.6834E-01	-2.1529E+00	-2.5670E+00
A	4.6418E+00	7.2262E+00	7.6411E+00
S	1.8386E+00	2.0184E+00	2.0764E+00
Z	1.8111E+00	2.1992E+00	2.3197E+00
GAME	9.0310E-01	8.9381E-01	8.9599E-01
U	1.9009E+01	2.6168E+00	2.5460E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4613E-07	1.1151E-03	1.9458E-03
O	3.7361E-01	5.4351E-01	5.6653E-01
O+	5.3898E-09	1.1536E-04	1.8131E-04
O++	7.2944E-44	3.1530E-21	4.0027E-20
O-	4.1308E-09	1.5490E-05	2.7644E-05
O2	7.4471E-02	1.0203E-03	9.3880E-04
O2+	1.4123E-07	3.9334E-06	4.7728E-06
O2-	5.7414E-10	4.5334E-08	7.5755E-08
C	1.3211E-07	8.9560E-02	1.3493E-01
C+	1.7838E-12	8.1000E-04	1.5120E-03
C++	1.2908E-34	1.0080E-14	6.6369E-14
C-	7.6579E-16	1.7589E-06	4.6500E-06
CO	5.2207E-01	3.6319E-01	2.9300E-01
CO+	6.2146E-09	2.0311E-04	2.5959E-04
CO2	2.9849E-02	1.7058E-04	1.2110E-04
C2	4.1580E-13	2.8938E-04	5.1074E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5478E+02	8.1378E+03	1.0604E+04
T	1.2634E+01	2.5737E+01	2.7340E+01
RHO	2.0608E+01	1.4807E+02	1.7262E+02
M	-5.4710E-01	-1.9238E+00	-2.3336E+00
A	4.4301E+00	7.0175E+00	7.4159E+00
S	1.7975E+00	1.9811E+00	2.0372E+00
Z	1.7400E+00	2.1354E+00	2.2410E+00
GAME	8.9277E-01	8.9603E-01	8.9473E-01
U	1.8311E+01	2.5630E+00	2.4932E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.7466E-08	7.5103E-04	1.4275E-03
O	3.2410E-01	5.3008E-01	5.5293E-01
O+	9.7105E-10	8.7591E-05	1.4237E-04
O++	3.4278E-46	6.7372E-22	1.1411E-20
O-	2.3701E-09	1.1022E-05	2.1385E-05
O2	1.0137E-01	1.1639E-03	1.0203E-03
O2+	7.7895E-08	3.7806E-06	4.4755E-06
O2-	4.8615E-10	3.6593E-08	6.3504E-08
C	3.9534E-08	6.3380E-02	1.0622E-01
C+	2.3498E-13	5.0083E-04	1.0743E-03
C++	1.2523E-36	2.9148E-15	2.5205E-14
C-	1.4726E-16	9.0121E-07	2.9042E-06
CO	5.2040E-01	4.0344E-01	3.3451E-01
CO+	1.9575E-09	1.7079E-04	2.3270E-04
CO2	4.8072E-02	2.2211E-04	1.5506E-04
C2	7.5527E-14	1.8262E-04	3.9282E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 5.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2600E+02	9.2595E+03	1.1959E+04
T	1.3853E+01	2.7294E+01	2.8805E+01
RHO	2.0214E+01	1.4974E+02	1.7334E+02
M	-7.9407E-01	-2.3890E+00	-2.8476E+00
A	4.8971E+00	7.4366E+00	7.8723E+00
S	1.8793E+00	2.0565E+00	2.1105E+00
Z	1.8807E+00	2.2667E+00	2.3952E+00
GAME	9.2048E-01	8.9391E-01	8.9850E-01
U	1.9697E+01	2.6648E+00	2.6001E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.9486E-07	1.5380E-03	2.5117E-03
O	4.2135E-01	5.5679E-01	5.7900E-01
O+	1.4305E-08	1.4688E-04	2.2837E-04
O++	2.5244E-41	1.1509E-20	1.3057E-19
O-	7.1903E-09	2.0421E-05	3.4946E-05
O2	4.7179E-02	9.2045E-04	8.6287E-04
O2+	2.6396E-07	4.1290E-06	5.0473E-06
O2-	6.0244E-10	5.3979E-08	8.7331E-08
C	5.6180E-07	1.1560E-01	1.6880E-01
C+	2.0304E-11	1.1804E-03	2.0362E-03
C++	2.5913E-32	2.7756E-14	1.5872E-13
C-	5.1917E-15	2.9406E-06	6.8036E-06
CO	5.1524E-01	3.2303E-01	2.5287E-01
CO+	2.4373E-08	2.2996E-04	2.8182E-04
CO2	1.6224E-02	1.3341E-04	9.3802E-05
C2	3.2739E-12	3.9752E-04	6.1353E-04

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/Sq-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.0300E+02	9.6157E+03	1.2309E+04
T	1.4040E+01	2.7949E+01	2.9408E+01
RMD	1.4050E+01	1.4722E+02	1.6908E+02
M	-9.2418E-01	-2.6301E+00	-3.1140E+00
A	5.2505E+00	7.6465E+00	8.1082E+00
S	1.9189E+00	2.0958E+00	2.1506E+00
Z	1.9430E+00	2.3369E+00	2.4732E+00
GAME	9.5577E-01	8.9519E-01	9.0147E-01
U	2.0364E+01	2.7088E+00	2.6607E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.4014E-07	2.0257E-03	3.2002E-03
O	4.0302E-01	5.6970E-01	5.9240E-01
O+	0.0001E-08	1.8326E-04	2.8019E-04
O++	4.7777E-38	3.5747E-20	3.9009E-19
G-	1.3554E-08	2.5587E-05	4.2367E-05
U2	2.2540E-02	8.3663E-04	7.8735E-04
O2+	5.2104E-07	4.3262E-06	5.4138E-06
U2-	5.4178E-10	6.1412E-08	9.6594E-08
C	9.9677E-06	1.4098E-01	1.8561E-01
C+	5.1414E-10	1.6167E-03	2.6097E-03
C++	2.7527E-29	6.6296E-14	3.5622E-13
C-	0.5335E-14	4.4158E-06	9.3097E-06
CU	5.0764E-01	2.8317E-01	2.1411E-01
CU+	1.4500E-07	2.5150E-04	2.9089E-04
CU2	0.7805E-03	1.0397E-04	7.0094E-05
C2	5.4200E-11	4.9523E-04	6.9002E-04

 $P_1 = 2.00E+02 \text{ N/Sq-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3087E+02	9.4765E+03	1.2079E+04
T	1.4009E+01	2.9050E+01	3.0736E+01
RMD	1.6907E+01	1.3145E+02	1.4963E+02
M	-1.1900E+00	-3.1155E+00	-3.6402E+00
A	0.1589E+00	8.0540E+00	8.5778E+00
S	1.9902E+00	2.1788E+00	2.2449E+00
Z	2.0031E+00	2.4818E+00	2.6299E+00
GAME	1.0040E+00	8.9979E-01	9.1020E-01
U	2.1505E+01	2.7806E+00	2.7565E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.0708E-05	3.2279E-03	5.0204E-03
O	4.9871E-01	5.9361E-01	6.1450E-01
O+	7.0018E-06	2.7388E-04	4.4013E-04
O++	4.6045E-29	2.3443E-19	2.8003E-18
G-	1.5342E-07	3.5043E-05	5.5024E-05
U2	1.5012E-03	6.7438E-04	6.2001E-04
U2+	1.1370E-06	4.5768E-06	5.8483E-06
U2-	5.0728E-10	6.7369E-08	1.0024E-07
C	1.9118E-03	1.8824E-01	2.3000E-01
C+	5.2599E-06	2.7160E-03	4.3360E-03
C++	8.0179E-21	2.8009E-13	1.5383E-12
C-	3.0594E-10	7.8159E-06	1.4072E-05
CU	4.9143E-01	2.1025E-01	1.4360E-01
CU+	1.4784E-05	2.7643E-04	3.1157E-04
CU2	3.8831E-04	5.9495E-05	3.6001E-05
C2	4.2190E-07	6.1884E-04	7.3199E-04

 $P_1 = 2.00E+02 \text{ N/Sq-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0120E+02	9.6385E+03	1.2340E+04
T	1.6538E+01	2.8519E+01	3.0113E+01
RMD	1.8325E+01	1.4031E+02	1.6062E+02
M	-1.0584E+00	-2.6720E+00	-3.3790E+00
A	5.7040E+00	7.8505E+00	8.3400E+00
S	1.9504E+00	2.1368E+00	2.2010E+00
Z	1.9838E+00	2.4087E+00	2.5513E+00
GAME	1.0197E+00	8.9716E-01	9.0534E-01
U	2.0940E+01	2.7458E+00	2.7081E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.4555E-06	2.5824E-03	4.0275E-03
O	4.8900E-01	5.8200E-01	6.0381E-01
O+	9.1027E-07	2.2476E-04	3.5590E-04
O++	9.6508E-34	9.4220E-20	1.0020E-18
G-	3.0731E-08	3.0425E-05	4.9205E-05
U2	6.4022E-03	7.5380E-04	7.0479E-04
O2+	9.5501E-07	4.4652E-06	5.6471E-06
U2-	4.5030E-10	6.5585E-08	1.0034E-07
C	7.3111E-05	1.6524E-01	2.0007E-01
C+	4.8210E-08	2.1232E-03	3.4191E-03
C++	3.2142E-25	1.4015E-13	7.4583E-13
C-	3.2044E-12	6.0515E-06	1.2051E-05
CU	5.0201E-01	2.4612E-01	1.7780E-01
CU+	1.5780E-06	2.6658E-04	3.0815E-04
CU2	1.7662E-03	7.9481E-05	5.1014E-05
C2	3.0342E-09	5.6976E-04	7.2927E-04

 $P_1 = 2.00E+02 \text{ N/Sq-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7901E+02	9.7355E+03	1.2378E+04
T	2.0579E+01	2.9699E+01	3.1561E+01
RMD	1.6310E+01	1.2816E+02	1.4461E+02
M	-1.3402E+00	-3.3759E+00	-3.9357E+00
A	6.2026E+00	8.2858E+00	8.8631E+00
S	2.0212E+00	2.2194E+00	2.2876E+00
Z	2.0249E+00	2.5578E+00	2.7140E+00
GAME	9.2413E-01	9.0378E-01	9.1774E-01
U	2.2229E+01	2.8333E+00	2.8260E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2233E-04	4.0356E-03	6.3963E-03
O	5.0508E-01	6.0484E-01	6.2455E-01
O+	2.0912E-05	3.4124E-04	5.8126E-04
O++	1.2430E-26	6.6631E-19	9.6937E-18
G-	4.4177E-07	4.1480E-05	6.5736E-05
U2	0.6517E-04	6.1472E-04	5.4969E-04
U2+	1.0211E-06	4.8375E-06	6.2981E-06
U2-	7.0212E-10	7.2749E-08	1.0521E-07
C	1.1973E-02	2.1059E-01	2.5042E-01
C+	5.9118E-05	3.4544E-03	5.5783E-03
C++	1.5001E-18	5.9552E-13	3.6201E-12
C-	6.7143E-09	1.0206E-05	1.8052E-05
CU	4.8107E-01	1.7508E-01	1.1077E-01
CU+	4.1728E-05	2.8686E-04	3.1512E-04
CU2	1.6242E-04	4.4269E-05	2.4174E-05
C2	6.0502E-06	6.5862E-04	7.1654E-04

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 6.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2192E+02	1.0334E+04	1.3131E+04
T	2.1560E+01	3.0478E+01	3.2646E+01
RHD	1.6270E+01	1.2858E+02	1.4381E+02
M	-1.4887E+00	-3.6533E+00	-4.2492E+00
A	6.3048E+00	8.5497E+00	9.2107E+00
S	2.0512E+00	2.2589E+00	2.3295E+00
Z	2.0580E+00	2.6371E+00	2.7970E+00
GAME	8.9585E-01	9.0946E-01	9.2909E-01
U	2.2920E+01	2.9045E+00	2.9199E+00

SPECIES	MOLE FRACTIONS	
E-	2.6997E-04	5.0786E-03
O	5.1355E-01	6.1551E-01
O+	3.2574E-05	4.3695E-04
O++	1.8641E-25	2.1913E-18
O-	8.2490E-07	5.0173E-05
O2	4.6232E-04	5.6433E-04
O2+	9.4305E-07	5.3052E-06
O2-	9.4144E-10	8.1196E-08
C	2.8272E-02	2.3202E-01
C+	1.7401E-04	4.4030E-03
C++	1.6975E-17	1.3661E-12
C-	2.9538E-08	1.3436E-05
CO	4.5705E-01	1.4090E-01
CO+	6.3297E-05	2.9695E-04
CO2	1.0469E-04	3.2096E-05
C2	2.0800E-05	6.8288E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1309E+02	1.1888E+04	1.5177E+04
T	2.2811E+01	3.2435E+01	3.5945E+01
RHD	1.6626E+01	1.3097E+02	1.4250E+02
M	-1.7499E+00	-4.2414E+00	-4.9369E+00
A	6.5608E+00	9.1794E+00	1.0162E+01
S	2.1107E+00	2.3371E+00	2.4133E+00
Z	2.1438E+00	2.7985E+00	2.9627E+00
GAME	8.8179E-01	9.2829E-01	9.6958E-01
U	2.4342E+01	3.0955E+00	3.2142E+00

SPECIES	MOLE FRACTIONS	
E-	6.5431E-04	8.3753E-03
O	5.3277E-01	6.3377E-01
O+	5.3969E-05	7.8827E-04
O++	4.0333E-24	3.5461E-17
O-	1.7615E-06	7.4389E-05
O2	3.3044E-04	4.5453E-04
O2+	9.1293E-07	6.5875E-06
O2-	1.4601E-09	9.9251E-08
C	6.6246E-02	2.6940E-01
C+	5.1338E-04	7.3714E-03
C++	2.2934E-16	9.0985E-12
C-	1.4493E-07	2.2732E-05
CO	3.9920E-01	7.8771E-02
CO+	4.2957E-05	3.0624E-04
CO2	6.2751E-05	1.3981E-05
C2	8.6624E-05	6.4128E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.0672E+02	1.1075E+04	1.4092E+04
T	2.2252E+01	3.1378E+01	3.4059E+01
RHD	1.6415E+01	1.2987E+02	1.4357E+02
M	-1.6420E+00	-3.9425E+00	-4.5836E+00
A	6.4327E+00	8.8446E+00	9.6374E+00
S	2.0809E+00	2.2981E+00	2.3715E+00
Z	2.0941E+00	2.7178E+00	2.8820E+00
GAME	8.8593E-01	9.1729E-01	9.4622E-01
U	2.3628E+01	2.9908E+00	3.0501E+00

SPECIES	MOLE FRACTIONS	
E-	4.5090E-04	6.4582E-03
O	5.2299E-01	6.2529E-01
O+	4.3223E-05	5.7559E-04
O++	1.0550E-24	8.1259E-18
O-	1.2056E-06	6.1013E-05
O2	3.7604E-04	5.1251E-04
O2+	9.1441E-07	5.8784E-06
O2-	1.1906E-09	9.0496E-08
C	4.6852E-02	2.5185E-01
C+	3.2847E-04	5.6514E-03
C++	7.5021E-17	3.3561E-12
C-	7.4459E-08	1.7557E-05
CO	4.2276E-01	1.0857E-01
CO+	7.9639E-05	3.0403E-04
CO2	7.8018E-05	2.2072E-05
C2	4.2504E-05	6.7965E-04

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.6093E+02	1.2747E+04	1.6362E+04
T	2.3300E+01	3.3723E+01	3.8422E+01
RHD	1.6803E+01	1.3138E+02	1.4028E+02
M	-1.9625E+00	-4.5492E+00	-5.3108E+00
A	6.7033E+00	9.5699E+00	1.0741E+01
S	2.1408E+00	2.3757E+00	2.4547E+00
Z	2.1912E+00	2.8770E+00	3.0357E+00
GAME	8.8012E-01	9.4393E-01	9.8908E-01
U	2.5061E+01	3.2207E+00	3.4214E+00

SPECIES	MOLE FRACTIONS	
E-	8.9480E-04	1.1211E-02
O	5.4200E-01	6.4029E-01
O+	6.5427E-05	1.1407E-03
O++	1.2504E-23	1.9359E-16
O-	2.3109E-06	9.1052E-05
O2	3.0030E-04	3.8838E-04
O2+	9.2662E-07	7.4762E-06
O2-	1.7579E-09	1.0604E-07
C	6.5884E-02	2.8355E-01
C+	7.2669E-04	9.8813E-03
C++	5.6713E-16	2.8428E-11
C-	2.4413E-07	2.9185E-05
CO	3.6221E-01	5.2531E-02
CO+	1.0432E-04	3.0171E-04
CO2	5.1000E-05	7.8610E-06
C2	9.7270E-05	5.6405E-04

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.1017E+02	1.3636E+04	1.7626E+04
T	2.3745E+01	3.5356E+01	4.1217E+01
RHO	1.711E+01	1.3072E+02	1.3700E+02
M	-2.1297E+00	-4.8651E+00	-5.7006E+00
A	6.8407E+00	1.0032E+01	1.1257E+01
S	2.1708E+00	2.4136E+00	2.4947E+00
Z	2.2402E+00	2.9505E+00	3.1022E+00
GAME	8.7972E-01	9.6469E-01	9.9104E-01
U	2.5780E+01	3.3789E+00	3.6406E+00

SPECIES	MOLE FRACTIONS	
E-	1.1506E-03	1.5703E-02
O	5.5241E-01	6.4376E-01
O+	7.7950E-05	1.7797E-03
O++	3.4336E-23	1.4541E-15
U-	2.9329E-06	1.1201E-04
O2	2.7859E-04	3.1481E-04
O2+	9.5811E-07	8.6190E-06
O2-	2.0659E-09	1.0912E-07
C	1.0529E-01	2.9251E-01
C+	9.6679E-04	1.3775E-02
C++	1.2390E-15	1.0850E-10
C-	3.7414E-07	3.7121E-05
CO	3.3953E-01	3.1250E-02
CU+	1.1420E-04	2.8853E-04
CO2	4.3141E-05	3.7509E-06
C2	1.2667E-04	4.5197E-04

P1 = 2.00E+02 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0128E+03	1.5441E+04	2.0281E+04
T	2.4582E+01	3.9745E+01	4.6424E+01
RHO	1.7509E+01	1.2632E+02	1.3505E+02
M	-2.4778E+00	-5.5202E+00	-6.5078E+00
A	7.1265E+00	1.1009E+01	1.2101E+01
S	2.2327E+00	2.4860E+00	2.5693E+00
Z	2.3450E+00	3.0754E+00	3.2347E+00
GAME	8.8102E-01	9.9154E-01	9.7521E-01
U	2.7219E+01	3.7902E+00	4.0683E+00

SPECIES	MOLE FRACTIONS	
E-	1.7896E-03	3.3631E-02
O	5.7179E-01	6.3610E-01
O+	1.0804E-04	5.1163E-03
O++	2.1322E-22	1.5667E-13
O-	4.4053E-06	1.6480E-04
O2	2.4636E-04	1.7970E-04
O2+	1.0373E-06	1.1786E-05
O2-	2.7459E-09	1.0088E-07
C	1.4389E-01	2.8749E-01
C+	1.5541E-03	2.8482E-02
C++	4.8836E-15	2.3629E-09
C-	7.4904E-07	5.5151E-05
CO	2.8027E-01	8.3057E-03
CU+	1.3094E-04	2.4038E-04
CO2	3.0362E-05	5.6406E-07
C2	1.8446E-04	2.1919E-04

P1 = 2.00E+02 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.6080E+02	1.4530E+04	1.8934E+04
T	2.4172E+01	3.7403E+01	4.3934E+01
RHO	1.7342E+01	1.2879E+02	1.3604E+02
M	-2.3015E+00	-5.1888E+00	-6.1009E+00
A	6.9827E+00	1.0538E+01	1.1699E+01
S	2.2017E+00	2.4505E+00	2.5329E+00
Z	2.2920E+00	3.0164E+00	3.1678E+00
GAME	8.8009E-01	9.8438E-01	9.8334E-01
U	2.6500E+01	3.5727E+00	3.8687E+00

SPECIES	MOLE FRACTIONS	
E-	1.4559E-03	2.2947E-02
O	5.6224E-01	6.4263E-01
O+	9.2313E-05	2.9877E-03
O++	8.8381E-23	1.4572E-14
O-	3.6313E-06	1.3738E-04
O2	2.6078E-04	2.4105E-04
O2+	9.9281E-07	1.0073E-05
O2-	2.3970E-09	1.0703E-07
C	1.2485E-01	2.9402E-01
C+	1.2437E-03	1.9866E-02
C++	2.3553E-15	4.9787E-10
C-	5.4234E-07	4.6212E-05
CO	3.0954E-01	1.6519E-02
CU+	1.2310E-04	2.6661E-04
CO2	3.0139E-05	1.5086E-06
C2	1.5035E-04	3.2598E-04

P1 = 2.00E+02 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0801E+03	1.6374E+04	2.1656E+04
T	2.4986E+01	4.2124E+01	4.8700E+01
RHO	1.7781E+01	1.2410E+02	1.3461E+02
M	-2.6587E+00	-5.8598E+00	-6.9216E+00
A	7.2737E+00	1.1413E+01	1.2484E+01
S	2.2640E+00	2.5203E+00	2.6045E+00
Z	2.3946E+00	3.1321E+00	3.3036E+00
GAME	8.8240E-01	9.8733E-01	9.6878E-01
U	2.7937E+01	4.0078E+00	4.2504E+00

SPECIES	MOLE FRACTIONS	
E-	2.1669E-03	4.7192E-02
O	5.8112E-01	6.2513E-01
O+	1.2764E-04	8.3491E-03
O++	4.9581E-22	1.3502E-12
O-	5.2697E-06	1.9039E-04
O2	2.3358E-04	1.3597E-04
O2+	1.0887E-06	1.3586E-05
O2-	3.1130E-09	9.3185E-08
C	1.0251E-01	2.7534E-01
C+	1.9066E-03	3.8867E-02
C++	9.0812E-15	9.5970E-09
C-	1.0000E-06	6.2401E-05
CO	2.5155E-01	4.3583E-03
CU+	1.3788E-04	2.1520E-04
CO2	2.5399E-05	2.2401E-07
C2	2.1025E-04	1.4606E-04

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1207E+03	1.7331E+04	2.3055E+04
T	2.5394E+01	4.4380E+01	5.0804E+01
RHO	1.7973E+01	1.2242E+02	1.3449E+02
M	-2.8442E+00	-6.2081E+00	-7.3429E+00
A	7.4253E+00	1.1778E+01	1.2855E+01
S	2.2957E+00	2.5534E+00	2.6387E+00
Z	2.4556E+00	3.1898E+00	3.3742E+00
GAME	8.8420E-01	9.7993E-01	9.6397E-01
U	2.8653E+01	4.2123E+00	4.4189E+00

SPECIES	MOLE FRACTIONS		
E-	2.5973E-03	6.2518E-02	1.1201E-01
O	5.9020E-01	6.1121E-01	5.5972E-01
O+	1.5014E-04	1.2668E-02	3.1717E-02
O++	1.1418E-21	8.4651E-12	5.7226E-10
D-	6.2359E-06	2.1197E-04	2.7338E-04
O2	2.2162E+04	1.0624E+04	6.3875E-05
O2+	1.1473E-06	1.5331E-05	2.1380E-05
O2-	3.4960E-09	8.5574E-08	7.7710E-08
C	1.8063E-01	2.6051E-01	2.1476E-01
C+	2.3096E-03	4.9922E-02	8.0469E-02
C++	1.6603E-14	3.1377E-08	4.4352E-07
C-	1.3006E-06	6.7401E-05	7.7829E-05
CO	2.2349E-01	2.4781E-03	7.0021E-04
CO+	1.4395E-04	1.9318E-04	1.4995E-04
CO2	2.1060E-05	9.9708E-08	1.7004E-08
C2	2.3278E-04	9.9748E-05	4.0108E-05

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2339E+03	1.9302E+04	2.5893E+04
T	2.6243E+01	4.8432E+01	5.4630E+01
RHO	1.8287E+01	1.2036E+02	1.3405E+02
M	-3.2288E+00	-6.9306E+00	-8.2093E+00
A	7.7461E+00	1.2457E+01	1.3572E+01
S	2.3598E+00	2.6173E+00	2.7052E+00
Z	2.5712E+00	3.3112E+00	3.5201E+00
GAME	8.8926E-01	9.6768E-01	9.5782E-01
U	3.0082E+01	4.5771E+00	4.7269E+00

SPECIES	MOLE FRACTIONS		
E-	3.6762E-03	9.5409E-02	1.4842E-01
O	6.0741E-01	5.7823E-01	5.1737E-01
O+	2.1064E-04	2.4207E-02	4.9918E-02
O++	6.4260E-21	1.4907E-10	4.5942E-09
D-	8.5402E-06	2.4211E-04	2.8533E-04
O2	1.9821E-04	7.0462E-05	4.5144E-05
O2+	1.2866E-06	1.8405E-05	2.3829E-05
O2-	4.2941E-09	7.1926E-08	6.4372E-08
C	2.1510E-01	2.2921E-01	1.8460E-01
C+	3.3215E-03	7.1340E-02	9.8718E-02
C++	5.5749E-14	1.9584E-07	1.6291E-06
C-	2.0781E-06	7.1519E-05	7.4585E-05
CO	1.6964E-01	9.9024E-04	3.4410E-04
CO+	1.5332E-04	1.5750E-04	1.2143E-04
CO2	1.3860E-05	2.6649E-08	5.9768E-09
C2	2.6459E-04	5.0705E-05	2.1804E-05

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1767E+03	1.8304E+04	2.4403E+04
T	2.5812E+01	4.6478E+01	5.2770E+01
RHO	1.8138E+01	1.2120E+02	1.3451E+02
M	-3.0343E+00	-6.5651E+00	-7.7720E+00
A	7.5844E+00	1.2123E+01	1.3210E+01
S	2.3279E+00	2.5857E+00	2.6722E+00
Z	2.5132E+00	3.2494E+00	3.4404E+00
GAME	8.8648E-01	9.7313E-01	9.6042E-01
U	2.9369E+01	4.4017E+00	4.5768E+00

SPECIES	MOLE FRACTIONS		
E-	3.0982E-03	7.8765E-02	1.3039E-01
O	5.9904E-01	5.9538E-01	5.3880E-01
O+	1.7748E-04	1.7985E-02	4.0455E-02
O++	2.7092E-21	3.9769E-11	1.7342E-09
D-	7.3260E-06	2.2908E-04	2.8122E-04
O2	2.0984E-04	8.5517E-05	5.3421E-05
O2+	1.2133E-06	1.6946E-05	2.2737E-05
O2-	3.8924E-09	7.8460E-08	7.0933E-08
C	1.9831E-01	2.4482E-01	1.9915E-01
C+	2.7793E-03	6.0888E-02	9.0140E-02
C++	3.0504E-14	8.4561E-08	8.8651E-07
C-	1.6596E-06	7.0302E-05	7.6800E-05
CO	1.9596E-01	1.5199E-03	4.8044E-04
CO+	1.4913E-04	1.7413E-04	1.3490E-04
CO2	1.7207E-05	4.9404E-08	9.8660E-09
C2	2.5126E-04	7.0187E-05	2.9317E-05

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2924E+03	2.0300E+04	2.7314E+04
T	2.6701E+01	5.0262E+01	5.6401E+01
RHO	1.8400E+01	1.1967E+02	1.3471E+02
M	-3.4280E+00	-7.3045E+00	-8.6548E+00
A	7.9185E+00	1.2784E+01	1.3922E+01
S	2.3922E+00	2.6485E+00	2.7379E+00
Z	2.6305E+00	3.3749E+00	3.5950E+00
GAME	8.9274E-01	9.6346E-01	9.5597E-01
U	3.0792E+01	4.7414E+00	4.8710E+00

SPECIES	MOLE FRACTIONS		
E-	4.3694E-03	1.1216E-01	1.6607E-01
O	6.1546E-01	5.6013E-01	4.9550E-01
O+	2.5262E-04	3.1244E-02	5.9942E-02
O++	1.5704E-20	4.6830E-10	1.0920E-08
D-	9.9232E-06	2.5134E-04	2.8604E-04
O2	1.8630E-04	5.9011E-05	3.8390E-05
O2+	1.3689E-06	1.9677E-05	2.4637E-05
O2-	4.6970E-09	6.5791E-08	5.8113E-08
C	2.3127E-01	2.1413F-01	1.7123E-01
C+	3.9714E-03	8.1074E-02	1.0630E-01
C++	1.0359E-13	4.0329F-07	2.7000E-06
C-	2.5730E-06	7.1381E-05	7.1779E-05
CO	1.4403E-01	6.7561E-04	2.4003E-04
CO+	1.5045E-04	1.4269E-04	1.0922E-04
CO2	1.0848E-05	1.5322E-08	3.7499E-09
C2	2.7213E-04	3.7390E-05	1.6430E-05

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SQ-M, U51= 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3521E+03	2.1293E+04	2.8718E+04
T	2.7196E+01	5.1988E+01	5.8099E+01
RMD	1.8478E+01	1.1905E+02	1.3404E+02
M	-3.6317E+00	-7.6865E+00	-9.1087E+00
A	4.1023E+00	1.3105E+01	1.4270E+01
S	2.4248E+00	2.6793E+00	2.7703E+00
Z	2.0905E+00	3.4403E+00	3.6711E+00
GAME	4.9715E-01	9.6022E-01	9.5473E-01
U	3.1500E+01	4.8965E+00	5.0102E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.2157E-03	1.2883E-01	1.8529E-01
O-	6.2305E-01	5.4132E-01	4.7454E-01
O+	3.0708E-04	3.9007E-02	7.0502E-02
O++	4.0343E-20	1.2797E-09	2.3612E-08
D-	1.1505E-05	2.5718E-04	2.8370E-04
O2	1.7299E-04	4.9988E-05	3.2750E-05
U2+	1.4620E-06	2.0746E-05	2.5100E-05
O2-	5.0899E-09	5.9992E-08	5.2144E-08
C	2.4658E-01	1.9981E-01	1.5895E-01
C+	4.7635E-03	8.9998E-02	1.1294E-01
C++	1.9812E-13	7.5779E-07	4.5111E-06
C-	3.1526E-06	7.0209E-05	6.8477E-05
CO	1.1940E-01	4.7761E-04	1.8483E-04
CO+	1.5836E-04	1.2934E-04	9.8103E-05
CO2	8.2405E-06	9.2494E-09	2.4132E-09
C2	2.7290E-04	2.8022E-05	1.2505E-05

P1 = 2.00E+02 N/SQ-M, U51= 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4749E+03	2.3192E+04	3.1390E+04
T	2.8371E+01	5.5185E+01	6.1314E+01
RMD	1.8493E+01	1.1754E+02	1.3370E+02
M	-4.0525E+00	-8.4732E+00	-1.0040E+01
A	8.5219E+00	1.3734E+01	1.4959E+01
S	2.4903E+00	2.7405E+00	2.8349E+00
Z	2.8112E+00	3.5756E+00	3.8268E+00
GAME	9.1057E-01	9.5592E-01	9.5374E-01
U	3.2901E+01	5.1844E+00	5.2773E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.6763E-03	1.6153E-01	2.1041E-01
O-	6.3036E-01	5.0226E-01	4.2928E-01
O+	4.8422E-04	5.6353E-02	9.2799E-02
O++	3.4582E-19	6.9755E-09	9.2442E-08
D-	1.5499E-05	2.5992E-04	2.7140E-04
O2	1.4329E-04	3.6571E-05	2.3455E-05
O2+	1.6924E-06	2.2220E-05	2.5353E-05
O2-	5.7808E-09	4.9132E-08	4.1021E-08
C	2.7371E-01	1.7372E-01	1.3711E-01
C+	7.0531E-03	1.0537E-01	1.2382E-01
C++	8.5203E-13	2.1806E-06	1.0410E-05
C-	4.6648E-06	6.5672E-05	6.0922E-05
CO	7.4135E-02	2.5747E-04	1.0641E-04
CO+	1.5747E-04	1.0606E-04	7.8030E-05
CO2	4.1620E-06	3.7293E-09	1.0509E-09
C2	2.5031E-04	1.6298E-05	7.3435E-06

P1 = 2.00E+02 N/SQ-M, U51= 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4129E+03	2.2264E+04	3.0090E+04
T	2.7745E+01	5.3626E+01	5.9742E+01
RMD	1.8512E+01	1.1837E+02	1.3435E+02
M	-3.8399E+00	-8.0762E+00	-9.5719E+00
A	4.3013E+00	1.3421E+01	1.4617E+01
S	2.4576E+00	2.7100E+00	2.8028E+00
Z	2.7509E+00	3.5073E+00	3.7408E+00
GAME	9.0288E-01	9.5775E-01	9.5401E-01
U	3.2203E+01	5.0438E+00	5.1505E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2015E-03	1.4531E-01	2.0016E-01
O-	6.3007E-01	5.2198E-01	4.5130E-01
O+	3.0506E-04	4.7406E-02	8.1591E-02
O++	3.1206E-19	3.1281E-09	4.8510E-08
D-	1.3338E-05	2.5996E-04	2.7879E-04
O2	1.5886E-04	4.2662E-05	2.7941E-05
O2+	1.5886E-06	2.1599E-05	2.5397E-05
O2-	5.4582E-09	5.4462E-08	4.6415E-08
C	2.6082E-01	1.8633E-01	1.4753E-01
C+	5.7578E-03	9.8090E-02	1.1878E-01
C++	3.4722E-13	1.3240E-06	6.9979E-06
C-	3.8444E-06	6.8245E-05	6.4804E-05
CO	9.6074E-02	3.4698E-04	1.3427E-04
CO+	1.5881E-04	1.1720E-04	8.7890E-05
CO2	6.0409E-06	5.7919E-09	1.5787E-09
C2	2.6599E-04	2.1267E-05	9.5762E-06

P1 = 2.00E+02 N/SQ-M, U51= 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5379E+03	2.4049E+04	3.2500E+04
T	2.9109E+01	5.6671E+01	6.2859E+01
RMD	1.8405E+01	1.1842E+02	1.3270E+02
M	-4.2697E+00	-8.8768E+00	-1.0510E+01
A	8.7732E+00	1.4042E+01	1.5302E+01
S	2.5230E+00	2.7712E+00	2.8673E+00
Z	2.8705E+00	3.6451E+00	3.9062E+00
GAME	9.2115E-01	9.5459E-01	9.5386E-01
U	3.3592E+01	5.3188E+00	5.4061E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.5934E-03	1.7745E-01	2.3230E-01
O-	6.4163E-01	4.8227E-01	4.0724E-01
O+	6.3991E-04	6.5758E-02	1.0426E-01
O++	1.2467E-18	1.4410E-08	1.6795E-07
D-	1.8101E-05	2.5724E-04	2.6191E-04
O2	1.2601E-04	3.1405E-05	2.0291E-05
O2+	1.8404E-06	2.2596E-05	2.5028E-05
O2-	6.0265E-09	4.4024E-08	3.5857E-08
C	2.8474E-01	1.6195E-01	1.2742E-01
C+	8.8215E-03	1.1189E-01	1.2823E-01
C++	2.0202E-12	3.4203E-06	1.5064E-05
C-	5.8524E-06	6.2625E-05	5.6802E-05
CO	5.4045E-02	1.9419E-04	8.1829E-05
CO+	1.5389E-04	9.5785E-05	7.0074E-05
CO2	2.6436E-06	2.4497E-09	7.0386E-09
C2	2.2578E-04	1.2578E-05	5.7192E-06

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 9.80E+03 M/SEC

P1 = 2.00E+02 N/SQ-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6017E+03	2.4794E+04	3.3627E+04
T	3.0011E+01	5.8085E+01	6.4308E+01
RHO	1.8229E+01	1.1488E+02	1.3117E+02
M	-4.4912E+00	-9.2861E+00	-1.0990E+01
A	9.0671E+00	1.4347E+01	1.5642E+01
S	2.5553E+00	2.8020E+00	2.8999E+00
Z	2.9277E+00	3.7158E+00	3.9860E+00
GAME	9.3565E-01	9.5369E-01	9.5434E-01
U	3.4273E+01	5.4469E+00	5.5317E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6602E+03	2.5389E+04	3.4400E+04
T	3.1130E+01	5.9428E+01	6.5719E+01
RHO	1.7949E+01	1.1280E+02	1.2889E+02
M	-4.7171E+00	-9.7000E+00	-1.1400E+01
A	9.4079E+00	1.4647E+01	1.5900E+01
S	2.5073E+00	2.8331E+00	2.9328E+00
Z	2.9814E+00	3.7876E+00	4.0679E+00
GAME	9.5347E-01	9.5316E-01	9.5514E-01
U	3.4941E+01	5.5688E+00	5.6574E+00

SPECIES	MOLE FRACTIONS		
E-	1.2381E-02	1.9305E-01	2.4776E-01
O	6.4538E-01	4.6214E-01	3.8539E-01
O+	8.9101E-04	7.5523E-02	1.1584E-01
O++	5.6401E-18	2.7863E-08	2.9139E-07
D-	2.1308E-05	2.5205E-04	2.5026E-04
O2	1.0699E-04	2.6954E-05	1.7180E-05
O2+	2.0225E-06	2.2715E-05	2.4428E-05
O2-	6.1522E-09	3.9055E-08	3.0962E-08
C	2.9304E-01	1.5097E-01	1.1843E-01
C+	1.1368E-02	1.1771E-01	1.3209E-01
C++	5.5326E-12	5.1476E-06	2.1202E-05
C-	6.8915E-06	5.9200E-05	5.2007E-05
CO	3.6463E-02	1.4817E-04	6.3239E-05
CO+	1.4754E-04	8.6266E-05	6.2201E-05
CO2	1.5033E-06	1.6318E-09	4.7324E-10
C2	1.9203E-04	9.7529E-06	4.4300E-06

SPECIES	MOLE FRACTIONS		
E-	1.0019E-02	2.0830E-01	2.6278E-01
O	6.4683E-01	4.4195E-01	3.6379E-01
O+	1.3230E-03	8.5566E-02	1.2744E-01
O++	3.3638E-17	5.0826E-08	4.8030E-07
D-	2.5292E-05	2.4451E-04	2.3003E-04
O2	8.6913E-05	2.3078E-05	1.4457E-05
O2+	2.2511E-06	2.2570E-05	2.3567E-05
O2-	0.1090E-09	3.4256E-08	2.6364E-08
C	2.4730E-01	1.4072E-01	1.1000E-01
C+	1.5190E-02	1.2291E-01	1.3040E-01
C++	1.8057E-11	7.4764E-06	2.9130E-05
C-	8.4930E-06	5.5479E-05	4.8390E-05
CO	2.2324E-02	1.1409E-04	4.8994E-05
CO+	1.3805E-04	7.7423E-05	5.4900E-05
CO2	7.4400E-07	1.0972E-09	3.1817E-10
C2	1.5172E-04	7.5840E-06	3.4303E-06

P1 = 2.00E+02 N/SQ-M, US1 = 1.05E+04 M/SEC

P1 = 2.00E+02 N/SQ-M, US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6007E+03	2.6394E+04	3.5830E+04
T	3.4785E+01	6.2548E+01	6.9000E+01
RHO	1.6903E+01	1.0625E+02	1.2130E+02
M	-5.3000E+00	-1.0757E+01	-1.2722E+01
A	1.0247E+01	1.5388E+01	1.6623E+01
S	2.6037E+00	2.9117E+00	3.0100E+00
Z	3.0989E+00	3.9715E+00	4.2750E+00
GAME	9.7402E-01	9.5323E-01	9.5849E-01
U	3.6505E+01	5.8491E+00	5.9499E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.0034E+03	2.7621E+04	3.7537E+04
T	3.8351E+01	6.5614E+01	7.2500E+01
RHO	1.0247E+01	1.0116E+02	1.1524E+02
M	-5.9129E+00	-1.1865E+01	-1.4027E+01
A	1.0886E+01	1.6149E+01	1.7722E+01
S	2.7353E+00	2.9891E+00	3.0991E+00
Z	3.2153E+00	4.1612E+00	4.4900E+00
GAME	9.6090E-01	9.5514E-01	9.6390E-01
U	3.8198E+01	6.1439E+00	6.2638E+00

SPECIES	MOLE FRACTIONS		
E-	3.7266E-02	2.4488E-01	2.9045E-01
O	6.3602E-01	3.9188E-01	3.1124E-01
O+	4.1428E-03	1.1150E-01	1.5020E-01
O++	5.4268E-15	1.8843E-07	1.5204E-06
D-	3.7792E-05	2.1882E-04	1.9082E-04
O2	4.5492E-05	1.5473E-05	9.1410E-06
O2+	3.0223E-06	2.1301E-05	2.0629E-05
O2-	5.3179E-09	2.3705E-08	1.6723E-08
C	2.6426E-01	1.1797E-01	9.1400E-02
C+	3.3063E-02	1.3353E-01	1.4224E-01
C++	5.0603E-10	1.6912E-05	5.9707E-05
C-	1.2208E-05	4.5842E-05	3.8000E-05
CO	4.9709E-03	6.0970E-05	2.5901E-05
CO+	1.0096E-04	5.8300E-05	3.9559E-05
CO2	0.7039E-08	4.1815E-10	1.1702E-10
C2	6.4000E-05	4.0831E-06	1.8017E-06

SPECIES	MOLE FRACTIONS		
E-	6.8602E-02	2.7926E-01	3.3201E-01
O	6.1006E-01	3.4206E-01	2.6010E-01
O+	1.0414E-02	1.3825E-01	1.8003E-01
O++	3.2056E-13	5.9597E-07	4.4009E-06
D-	4.8450E-05	1.9084E-04	1.6102E-04
O2	2.0041E-05	1.0308E-05	5.5716E-06
O2+	3.8345E-06	1.9409E-05	1.7273E-05
O2-	4.3726E-09	1.6098E-08	1.0107E-08
C	2.5119E-01	9.8948E-02	7.5001E-02
C+	2.8165E-02	1.4111E-01	1.4088E-01
C++	7.0291E-09	3.4670E-05	1.1000E-04
C-	1.4713E-05	3.7331E-05	2.9261E-05
CO	1.3079E-03	3.3567E-05	1.3020E-05
CO+	8.2327E-05	4.3511E-05	2.7784E-05
CO2	1.4150E-08	1.6562E-10	4.2084E-11
C2	2.7610E-05	2.2452E-06	9.3769E-07

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.15E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1856E+03	2.9305E+04	3.9910E+04
T	4.1363E+01	6.8770E+01	7.6307E+01
RHO	1.5813E+01	9.7829E+01	1.1114E+02
M	-6.5541E+00	-1.3034E+01	-1.5415E+01
A	1.1466E+01	1.6948E+01	1.8641E+01
S	2.8037E+00	3.0649E+00	3.1793E+00
Z	3.3415E+00	4.3559E+00	4.7059E+00
GAME	9.5125E-01	9.5885E-01	9.7180E-01
U	3.9662E+01	6.4529E+00	6.6113E+00

SPECIES	MOLE FRACTIONS	
E-	1.0295E-01	3.1146E-01
O	5.7781E-01	2.9372E-01
O+	2.0046E-02	1.6516E-01
O++	5.9073E-12	1.7132E-06
O-	5.5150E-05	1.6276E-04
O2	1.7021E-05	6.7670E-06
O2+	4.5355E-06	1.7149E-05
O2-	3.0137E-09	1.0717E-08
C	4.1561E-01	8.3020E-02
C+	8.2905E-02	1.4630E-01
C++	4.4457E-08	6.7189E-05
C-	1.5293E-05	3.0093E-05
CO	5.1284E-04	1.8729E-05
CO+	6.5205E-05	3.2119E-05
CO2	3.5916E-09	6.6597E-11
C2	1.3439E-05	1.2497E-06

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.25E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5771E+03	3.3480E+04	4.5961E+04
T	4.6369E+01	7.5550E+01	8.5316E+01
RHO	1.5371E+01	9.3195E+01	1.0469E+02
M	-7.9228E+00	-1.5540E+01	-1.8448E+01
A	1.2571E+01	1.8686E+01	2.0912E+01
S	2.9356E+00	3.2132E+00	3.3385E+00
Z	3.6157E+00	4.7551E+00	5.1457E+00
GAME	9.4202E-01	9.7194E-01	9.9610E-01
U	4.3244E+01	7.1427E+00	7.4300E+00

SPECIES	MOLE FRACTIONS	
E-	1.7058E-01	3.6922E-01
O	5.0454E-01	2.0362E-01
O+	4.8355E-02	2.1682E-01
O++	3.2592E-10	1.1844E-05
O-	5.9741E-05	1.0734E-04
O2	8.7415E-06	2.6190E-06
O2+	5.5122E-06	1.1895E-05
O2-	2.4649E-09	4.1301E-09
C	1.5402E-01	5.7921E-02
C+	1.2225E-01	1.5202E-01
C++	5.2768E-07	2.3188E-04
C-	1.3611E-05	1.8402E-05
CO	1.1600E-04	5.6289E-06
CO+	4.2400E-05	1.6372E-05
CO2	4.5798E-10	9.9218E-12
C2	3.9669E-06	3.7580E-07

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.20E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3770E+03	3.1291E+04	4.2750E+04
T	4.3991E+01	7.2060E+01	8.0509E+01
RHO	1.5546E+01	9.5344E+01	1.0780E+02
M	-7.2241E+00	-1.4260E+01	-1.6888E+01
A	1.2025E+01	1.7791E+01	1.9740E+01
S	2.8702E+00	3.1396E+00	3.2593E+00
Z	3.4757E+00	4.5544E+00	4.9204E+00
GAME	9.4578E-01	9.6439E-01	9.8246E-01
U	4.1546E+01	6.7842E+00	6.9991E+00

SPECIES	MOLE FRACTIONS	
E-	1.3729E-01	3.4145E-01
O	5.4226E-01	2.4738E-01
O+	3.2795E-02	1.9154E-01
O++	5.4381E-11	4.6022E-06
O-	5.8655E-05	1.3471E-04
O2	1.1971E-05	4.3086E-06
O2+	5.1005E-06	1.4600E-05
O2-	2.9918E-09	6.8536E-09
C	1.8276E-01	6.9521E-02
C+	1.0451E-01	1.4976E-01
C++	1.7063E-07	1.2579E-04
C-	1.4744E-05	2.3835E-05
CO	2.3140E-04	1.0391E-05
CO+	5.2508E-05	2.3256E-05
CO2	1.1672E-09	2.6331E-11
C2	7.1118E-06	6.9249E-07

 $P_1 = 2.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.30E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7858E+03	3.5848E+04	4.9517E+04
T	4.8557E+01	7.9340E+01	9.0993E+01
RHO	1.5264E+01	9.1178E+01	1.0156E+02
M	-8.6503E+00	-1.6874E+01	-2.0101E+01
A	1.3104E+01	1.9647E+01	2.2206E+01
S	2.9996E+00	3.2857E+00	3.4168E+00
Z	3.7587E+00	4.9534E+00	5.3581E+00
GAME	9.4091E-01	9.8178E-01	1.0114E+00
U	4.4950E+01	7.5306E+00	7.9403E+00

SPECIES	MOLE FRACTIONS	
E-	2.0207E-01	3.9472E-01
O	4.6584E-01	1.6300E-01
O+	6.6081E-02	2.4045E-01
O++	1.4394E-09	2.9924E-05
O-	5.9032E-05	8.1627E-05
O2	6.5245E-06	1.4949E-06
O2+	5.1572E-06	9.2012E-06
O2-	2.0184E-09	2.3008E-09
C	1.2980E-01	4.7827E-02
C+	1.3602E-01	1.5343E-01
C++	1.2931E-06	4.2862E-04
C-	1.2255E-05	1.3734E-05
CO	6.3679E-05	2.9220E-06
CO+	3.4317E-05	1.1095E-05
CO2	1.9663E-10	3.4623E-12
C2	2.3111E-06	1.9637E-07

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SU-M, US1= 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.0028E+03	3.8245E+04	5.3254E+04
T	5.0670E+01	8.3530E+01	9.7637E+01
RHO	1.5161E+01	8.8864E+01	9.8219E+01
H	-9.4064E+00	-1.8257E+01	-2.1846E+01
A	1.3646E+01	2.0683E+01	2.3538E+01
S	3.0647E+00	3.3573E+00	3.4933E+00
Z	3.9089E+00	5.1524E+00	5.5532E+00
GAME	9.4423E-01	9.9397E-01	1.0219E+00
U	4.6658E+01	7.9708E+00	8.5046E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3271E-01	4.1784E-01	4.5985E-01
O	4.2545E-01	1.2614E-01	6.1491E-02
O+	8.6060E-02	2.6188E-01	2.9782E-01
O++	5.3155E-09	7.5643E-05	8.0949E-04
U-	5.6800E-05	5.8472E-05	2.3332E-05
O2	4.8620E-06	7.8409E-07	1.3743E-07
O2+	5.8259E-06	6.6742E-06	2.6899E-06
O2-	1.6193E-09	1.1533E-09	1.8748E-10
C	1.0846E-01	3.8917E-02	2.3769E-02
C+	1.4668E-01	1.5426E-01	1.5201E-01
C++	2.8251E-06	8.0663E-04	4.2121E-03
C-	1.0797E-05	9.7811E-06	4.0928E-06
CO	3.5989E-05	1.4206E-06	2.2184E-07
CO+	2.7523E-05	7.1374E-06	2.1999E-06
CO2	8.8014E-11	1.0794E-12	5.3501E-14
C2	1.3657E-06	9.6635E-08	1.6025E-08

P1 = 2.00E+02 N/SU-M, US1= 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4614E+03	4.3263E+04	6.1338E+04
T	5.4054E+01	9.3723E+01	1.1245E+02
RHO	1.5023E+01	8.3710E+01	9.2912E+01
H	-1.1004E+01	-2.1168E+01	-2.5550E+01
A	1.4730E+01	2.2953E+01	2.5714E+01
S	3.1925E+00	3.4948E+00	3.6382E+00
Z	4.2102E+00	5.5143E+00	5.8813E+00
GAME	9.4100E-01	1.0194E+00	1.0010E+00
U	5.0082E+01	9.0035E+00	9.6517E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.8860E-01	4.5605E-01	4.8944E-01
O	3.4537E-01	6.7235E-02	2.9036E-02
O+	1.2090E-01	2.9491E-01	3.0550E-01
O++	4.0178E-08	5.1177E-04	5.5159E-03
O-	4.9433E-05	2.4322E-05	7.4430E-06
O2	2.6650E-06	1.5872E-07	1.8790E-08
O2+	5.4792E-06	2.8074E-06	8.3010E-07
O2-	9.9372E-10	1.9886E-10	2.0200E-11
C	7.7317E-02	2.4252E-02	1.3181E-02
C+	1.5471E-01	1.5387E-01	1.4008E-01
C++	1.0229E-05	3.1324E-03	1.6696E-02
C-	8.1037E-06	4.1698E-06	1.3301E-06
CO	1.7022E-05	2.5972E-07	2.7927E-08
CO+	1.7487E-05	2.4271E-06	5.4043E-07
CO2	1.9820E-11	6.7815E-14	1.8804E-15
C2	5.0973E-07	1.8368E-08	2.0070E-09

P1 = 2.00E+02 N/SU-M, US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2280E+03	4.0720E+04	5.7213E+04
T	5.2693E+01	8.8287E+01	1.0501E+02
RHO	1.5083E+01	8.6358E+01	9.5153E+01
H	-1.0191E+01	-1.9688E+01	-2.3673E+01
A	1.4187E+01	2.1798E+01	2.4735E+01
S	3.1290E+00	3.4272E+00	3.5674E+00
Z	4.0617E+00	5.3408E+00	5.7261E+00
GAME	9.4049E-01	1.0077E+00	1.0175E+00
U	4.8367E+01	8.4581E+00	9.0982E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.6155E-01	4.3883E-01	4.7616E-01
O	3.8509E-01	9.3851E-02	4.1348E-02
O+	1.0720E-01	2.8037E-01	3.0561E-01
O++	1.6673E-08	1.9498E-04	2.3029E-03
U-	5.3498E-05	3.9076E-05	1.2838E-05
O2	3.6229E-06	3.7156E-07	4.8420E-08
O2+	5.7202E-06	4.4966E-06	1.4670E-06
O2-	1.2796E-09	5.1044E-10	5.8162E-11
C	9.1665E-02	3.1059E-02	1.7596E-02
C+	1.5437E-01	1.5452E-01	1.4797E-01
C++	5.5790E-06	1.5668E-03	8.9904E-03
C-	9.3971E-06	6.5832E-06	2.2933E-06
CO	2.1106E-05	6.3499E-07	7.5192E-08
CO+	2.1990E-05	3.4073E-06	1.0694E-06
CO2	4.1181E-11	2.9155E-13	9.2354E-15
C2	8.2660E-07	4.3976E-08	5.4801E-09

P1 = 2.00E+02 N/SU-M, US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.7034E+03	4.5819E+04	6.5474E+04
T	5.6007E+01	9.9827E+01	1.1870E+02
RHO	1.4957E+01	8.0939E+01	9.1434E+01
H	-1.1040E+01	-2.2695E+01	-2.7473E+01
A	1.5245E+01	2.4051E+01	2.6580E+01
S	3.2562E+00	3.5611E+00	3.7058E+00
Z	4.3742E+00	5.6707E+00	6.0296E+00
GAME	9.4354E-01	1.0218E+00	9.8600E-01
U	5.1792E+01	9.5747E+00	1.0126E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.1429E-01	4.7105E-01	5.0253E-01
O	3.0616E-01	4.6940E-02	2.1747E-02
O+	1.5098E-01	3.0439E-01	2.9910E-01
O++	1.1783E-07	1.3332E-03	1.0763E-02
U-	4.4729E-05	1.4309E-05	4.7493E-06
O2	1.9578E-06	6.2591E-08	8.5739E-09
O2+	5.1006E-06	1.6451E-06	5.0910E-07
O2-	7.5133E-10	7.0109E-11	8.4543E-12
C	6.5169E-02	1.8543E-02	1.0150E-02
C+	1.6330E-01	1.5144E-01	1.2941E-01
C++	1.7908E-05	6.2828E-03	2.6400E-02
C-	6.9047E-06	2.5032E-06	8.3237E-07
CO	7.7037E-06	9.8912E-08	1.2098E-08
CO+	1.3757E-05	1.2873E-06	2.9078E-07
CO2	9.5555E-12	1.4061E-14	4.9971E-16
C2	3.1509E-07	7.1116E-09	8.3971E-10

TABLE I.- Continued

$$p_1 = 200 \text{ N/m}^2$$

P1 = 2.00E+02 N/SM, US1= 1.55E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9524E+03	4.8395E+04	6.9608E+04
T	5.8573E+01	1.0611E+02	1.2454E+02
RHO	1.4883E+01	7.8499E+01	9.0483E+01
H	-1.2716E+01	-2.4270E+01	-2.9421E+01
A	1.5854E+01	2.4973E+01	2.7409E+01
S	3.3198E+00	3.8248E+00	3.7711E+00
Z	4.5346E+00	5.8098E+00	6.1772E+00
GAME	9.4636E-01	1.0116E+00	9.7656E-01
U	5.3500E+01	1.0157E+01	1.0531E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.3653E-01	4.8371E-01	5.1442E-01
O	2.6601E-01	3.3264E-02	1.7137E-02
O+	1.7298E-01	3.0782E-01	2.8873E-01
U++	2.8222E-07	3.1571E-03	1.7894E-02
O-	3.9606E-05	8.4836E-06	3.2852E-06
U2	1.3984E-06	2.5272E-08	4.4729E-09
U2+	4.6189E-06	9.6162E-07	3.3436E-07
O2-	5.5101E-10	2.5282E-11	4.1378E-12
C	5.4860E-02	1.4163E-02	8.0284E-03
C+	1.6554E-01	1.4618E-01	1.1767E-01
C++	3.0329E-05	1.1704E-02	3.6113E-02
C-	5.8107E-06	1.5002E-06	5.5773E-07
CO	4.6759E-06	3.8564E-08	5.9656E-09
CO+	1.0689E-05	6.8135E-07	1.7546E-07
CO2	4.5505E-12	3.0655E-15	1.6562E-16
C2	1.9547E-07	2.7769E-09	3.9518E-10

P1 = 2.00E+02 N/SM, US1= 1.60E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.2102E+03	5.1049E+04	7.3694E+04
T	6.0580E+01	1.1212E+02	1.2973E+02
RHO	1.4796E+01	7.6641E+01	8.9796E+01
H	-1.3614E+01	-2.5899E+01	-3.1396E+01
A	1.6443E+01	2.5760E+01	2.8223E+01
S	3.3835E+00	3.6868E+00	3.8347E+00
Z	4.6968E+00	5.9407E+00	6.3259E+00
GAME	9.5014E-01	9.9627E-01	9.7057E-01
U	5.5202E+01	1.0670E+01	1.0859E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.6137E-01	4.9508E-01	5.2583E-01
O	2.3118E-01	2.4605E-02	1.3962E-02
U+	1.9459E-01	3.0559E-01	2.7503E-01
U++	6.4709E-07	6.4572E-03	2.6508E-02
O-	3.4238E-05	5.3307E-06	2.4020E-06
U2	9.7166E-07	1.1290E-08	2.5655E-09
U2+	4.0620E-06	5.8852E-07	2.2980E-07
O2-	3.8930E-10	1.0246E-11	2.2538E-12
C	4.6038E-02	1.0978E-02	6.4860E-03
C+	1.6671E-01	1.3797E-01	1.0602E-01
C++	5.0354E-05	1.9308E-02	4.5521E-02
C-	4.8184E-06	9.3715E-07	3.9282E-07
CO	2.8127E-06	1.6520E-08	3.2218E-09
CO+	8.1728E-06	3.7763E-07	1.0935E-07
CO2	2.1267E-12	7.8861E-16	6.3998E-17
C2	1.2006E-07	1.1683E-09	2.0278E-10

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0730E+00	1.0859E+00	1.1046E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1125E-01
U	3.0950E+00	9.6609E-01	8.7896E-01

SPECIES	MOLE FRACTIONS		
E-	3.0393E-51	9.0745E-42	3.1953E-33
O	3.2570E-14	2.0824E-11	1.2102E-09
C+	2.0095E-37	1.3382E-33	9.3717E-31
O++	0.	0.	0.
C-	9.3527E-58	2.8440E-47	5.8302E-38
C2	4.3942E-04	4.3993E-04	4.4094E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0357E-51	4.9641E-42	3.7098E-34
C	1.4926E-52	1.3108E-43	1.3138E-35
C+	8.2340E-63	1.8687E-54	5.0017E-47
C++	0.	0.	0.
C-	2.1456E-97	1.9434E-80	1.3060E-64
CO	2.2851E-11	2.1998E-08	2.0590E-06
CC+	3.3334E-36	7.3032E-32	1.5909E-28
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	9.1543E-77	7.9547E-64	6.2374E-52

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9448E+02	2.9113E+02
T	3.8892E+00	5.6702E+00	6.4702E+00
RHO	8.0418E+00	3.4269E+01	4.4790E+01
H	8.8932E-01	8.0783E-01	7.6542E-01
A	1.8835E+00	2.2567E+00	2.3975E+00
S	1.1358E+00	1.1621E+00	1.1837E+00
Z	1.0000E+00	1.0009E+00	1.0047E+00
GAME	9.1255E-01	8.9730E-01	8.8425E-01
U	4.5382E+00	1.0656E+00	9.9086E-01

SPECIES	MOLE FRACTIONS		
E-	2.8290E-34	2.8824E-19	1.1030E-16
O	7.1671E-10	1.6278E-06	2.4454E-05
O+	3.0221E-31	7.4429E-27	1.1314E-24
O++	0.	0.	7.3536E-92
C-	2.2753E-39	2.6919E-22	1.0393E-19
O2	4.4046E-04	1.3828E-03	5.0425E-03
O2+	1.7597E-18	1.4599E-18	1.1700E-16
O2-	1.1806E-35	9.5745E-21	4.8416E-18
C	1.3587E-36	2.2356E-23	6.2710E-21
C+	6.0763E-48	1.3660E-35	2.0107E-31
C++	0.	9.6982E-85	6.5520E-75
C-	1.5172E-66	7.8391E-39	3.1607E-34
CO	1.0785E-06	1.8883E-03	9.2336E-03
CC+	4.0612E-29	1.4200E-24	1.5724E-21
CO2	9.9956E-01	9.9673E-01	9.8570E-01
C2	2.1643E-53	1.0688E-33	7.8497E-30

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2170E+02	1.9022E+02
T	3.1957E+00	4.5030E+00	5.2531E+00
RHO	7.1505E+00	2.7029E+01	3.6198E+01
H	9.1903E-01	8.6219E-01	8.2791E-01
A	1.7137E+00	2.0227E+00	2.1778E+00
S	1.1044E+00	1.1241E+00	1.1446E+00
Z	1.0000E+00	1.0000E+00	1.0003E+00
GAME	9.1904E-01	9.0856E-01	9.0262E-01
U	3.8201E+00	1.0100E+00	9.3799E-01

SPECIES	MOLE FRACTIONS		
E-	2.4701E-41	1.0511E-25	7.3002E-22
O	3.0154E-12	7.5562E-09	3.1893E-07
C+	6.9092E-34	2.2553E-29	3.5487E-27
O++	0.	0.	0.
C-	4.9652E-47	8.1347E-30	1.5801E-25
C2	4.3991E-04	4.4857E-04	7.2169E-04
O2+	1.7597E-18	1.7597E-18	1.7599E-18
O2-	4.0053E-42	2.5181E-27	1.9703E-23
C	3.2962E-43	7.9830E-29	1.1485E-25
C+	4.3151E-54	7.2176E-41	3.9129E-38
C++	0.	0.	1.1593E-91
C-	1.5682E-79	9.1287E-51	2.6002E-44
CO	5.2628E-09	1.7324E-05	5.6411E-04
CO+	4.5726E-32	1.3969E-26	1.3643E-24
CO2	9.9956E-01	9.9953E-01	9.9871E-01
C2	3.5768E-63	8.5073E-42	2.2888E-37

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1026E+01	2.8778E+02	4.1388E+02
T	4.6607E+00	6.8007E+00	7.4949E+00
RHO	8.8026E+00	4.1968E+01	5.4131E+01
H	8.5507E-01	7.4478E-01	6.9498E-01
A	2.0562E+00	2.4529E+00	2.5750E+00
S	1.1665E+00	1.1995E+00	1.2221E+00
Z	1.0000E+00	1.0083E+00	1.0202E+00
GAME	9.0717E-01	8.7750E-01	8.6717E-01
U	5.2492E+00	1.1024E+00	1.0168E+00

SPECIES	MOLE FRACTIONS		
E-	3.5171E-24	1.1696E-15	3.5856E-14
O	3.7642E-08	7.0320E-05	3.5840E-04
C+	9.2717E-29	6.6362E-22	7.8774E-20
O++	0.	5.7875E-91	2.4330E-80
C-	2.2426E-28	2.8290E-18	2.0910E-16
O2	4.8467E-04	8.5552E-03	1.9876E-02
O2+	1.7596E-18	1.2355E-15	3.8951E-14
O2-	2.9754E-26	6.1426E-19	2.8899E-15
C	1.1258E-27	4.5411E-19	4.3467E-17
C+	5.9030E-40	4.1818E-30	5.9275E-28
C++	0.	6.1259E-74	1.9194E-65
C-	1.8838E-48	5.7724E-33	9.0961E-31
CO	8.9592E-05	1.6308E-02	3.9249E-02
CC+	3.1855E-26	6.4130E-20	5.1248E-18
CO2	9.9943E-01	9.7507E-01	9.4052E-01
C2	2.8187E-40	2.0124E-28	6.0374E-26

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 1.80E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1 = 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2123E+01	4.0520E+02	5.6113E+02
T	5.4867E+00	7.7385E+00	8.3206E+00
RHD	9.4902E+00	5.0951E+01	6.4348E+01
H	8.1625E-01	6.7269E-01	6.1615E-01
A	2.2198E+00	2.6209E+00	2.7382E+00
S	1.1971E+00	1.2372E+00	1.2612E+00
Z	1.0010E+00	1.0277E+00	1.0480E+00
GAME	8.9720E-01	8.6371E-01	8.5988E-01
U	5.9596E+00	1.1120E+00	1.0290E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4634E+01	5.5378E+02	7.4335E+02
T	6.2848E+00	8.5178E+00	9.0356E+00
RHC	1.0229E+01	6.1397E-01	7.5743E+01
H	7.7280E-01	5.9134E-01	5.2792E-01
A	2.3592E+00	2.7829E+00	2.9025E+00
S	1.2267E+00	1.2763E+00	1.3019E+00
Z	1.0055E+00	1.0588E+00	1.0861E+00
GAME	8.8076E-01	8.5870E-01	8.5845E-01
U	6.6763E+00	1.1144E+00	1.0412E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.0620E-19	1.1728E-13	1.2003E-12
O	1.8907E-06	6.4695E-04	1.7934E-03
O+	1.9369E-26	4.7003E-19	1.7789E-17
O++	0.	9.9074E-78	6.1922E-74
O-	2.0219E-23	8.9114E-16	1.8609E-14
C2	1.3503E-03	2.6754E-02	4.4417E-02
O2+	1.8653E-18	1.2798E-13	1.3561E-12
O2-	1.1043E-21	9.8307E-15	1.3782E-13
C	4.5718E-24	2.1860E-16	6.0661E-15
C+	8.3149E-37	1.3817E-26	5.1153E-24
C++	2.8428E-89	2.5569E-63	4.8616E-60
C-	2.0642E-41	2.0524E-29	2.4151E-26
CO	1.9036E-03	5.3299E-02	8.9789E-02
CO+	4.7424E-24	2.4090E-17	5.7105E-16
CO2	9.9670E-01	9.1930E-01	8.6400E-01
C2	1.6228E-35	6.5216E-25	1.1053E-22

SPECIES ----- MOLE FRACTIONS -----

E-	5.2304E-17	2.6423E-12	1.3446E-11
O	3.4774E-05	2.6322E-03	5.3511E-03
O+	4.0445E-23	5.9373E-17	6.7081E-16
O++	3.2837E-93	1.1642E-71	2.2731E-67
O-	2.3725E-20	4.8413E-14	3.9092E-13
C2	5.8704E-03	5.3320E-02	7.4322E-02
O2+	5.4594E-17	2.9940E-12	1.5755E-11
O2-	5.6242E-19	3.0492E-13	1.9330E-12
C	1.3480E-20	1.7885E-14	1.7135E-13
C+	3.0123E-31	2.7491E-23	7.9664E-22
C++	9.0700E-76	3.2826E-58	9.4936E-55
C-	1.4613E-34	1.3948E-25	5.4888E-24
CO	1.0901E-02	1.0844E-01	1.5319E-01
CO+	1.4019E-21	1.6057E-15	1.4152E-14
CO2	9.8319E-01	8.3561E-01	7.6714E-01
C2	5.6742E-30	4.9342E-22	1.2040E-20

P1 = 5.00E+02 N/SQ-M, US1 = 2.20E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1 = 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8663E+01	7.4435E+02	9.7526E+02
T	6.9699E+00	9.2114E+00	9.7040E+00
RHC	1.1101E+01	7.3481E+01	8.8673E+01
H	7.2468E-01	5.0017E-01	4.2918E-01
A	2.4776E+00	2.9490E+00	3.0755E+00
S	1.2562E+00	1.3169E+00	1.3444E+00
Z	1.0167E+00	1.0997E+00	1.1333E+00
GAME	8.6627E-01	8.5845E-01	8.6003E-01
U	7.4075E+00	1.1211E+00	1.0594E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4156E+01	9.8145E+02	1.2630E+03
T	7.5372E+00	9.8645E+00	1.0357E+01
RHD	1.2072E+01	8.6606E+01	1.0258E+02
H	6.7194E-01	3.9955E-01	3.2005E-01
A	2.5871E+00	3.1231E+00	3.2604E+00
S	1.2862E+00	1.3591E+00	1.3886E+00
Z	1.0344E+00	1.1489E+00	1.1887E+00
GAME	8.5812E-01	8.6063E-01	8.6341E-01
U	8.1449E+00	1.1373E+00	1.0860E+00

SPECIES ----- MOLE FRACTIONS -----

E-	7.3830E-15	2.3176E-11	8.7769E-11
O	2.6887E-04	7.0664E-03	1.2207E-02
O+	1.0140E-20	1.3765E-15	1.1270E-14
O++	1.1801E-86	2.7792E-65	1.4730E-62
O-	1.4378E-17	7.3175E-13	4.0980E-12
C2	1.6561E-02	8.4035E-02	1.0584E-01
O2+	7.5678E-15	2.7206E-11	1.0641E-10
O2-	1.6830E-16	3.3276E-12	1.4732E-11
C	4.0819E-18	3.3824E-13	2.3033E-12
C+	1.1928E-28	1.6569E-21	3.8682E-20
C++	1.8275E-70	3.1485E-53	7.3982E-51
C-	8.1871E-32	1.1388E-23	3.4460E-22
CO	3.2525E-02	1.7434E-01	2.2311E-01
CO+	5.3293E-19	2.7455E-14	1.7309E-13
CO2	9.5064E-01	7.3450E-01	6.5885E-01
C2	2.0109E-27	2.5857E-20	4.4946E-19

SPECIES ----- MOLE FRACTIONS -----

E-	1.3035E-13	1.3192E-10	4.2015E-10
O	1.0484E-03	1.5071E-02	2.3684E-02
O+	6.9384E-19	1.7331E-14	1.2318E-13
O++	4.0230E-80	6.4669E-60	1.0128E-58
O-	5.2984E-16	6.4576E-12	2.8780E-11
C2	3.3004E-02	1.1492E-01	1.3546E-01
O2+	1.3472E-13	1.6019E-10	5.2494E-10
O2-	3.8611E-15	2.2107E-11	7.7576E-11
C	2.0433E-16	3.6433E-12	2.0632E-11
C+	3.8828E-26	2.6208E-20	1.0534E-18
C++	4.9476E-65	9.5581E-49	1.0716E-47
C-	4.1975E-29	2.4245E-22	1.1295E-20
CO	6.6206E-02	2.4415E-01	2.9387E-01
CO+	2.2320E-17	2.7259E-13	1.4391E-12
CO2	8.9974E-01	6.2585E-01	5.4699E-01
C2	4.4678E-25	5.7956E-19	9.6257E-18

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1= 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1109E+02	1.2666E+02	1.6086E+03
T	8.0210E+00	1.0503E+01	1.1016E+01
RHC	1.3079E+01	1.0005E+02	1.1666E+02
H	6.1459E-01	2.8968E-01	2.0054E-01
A	2.6940E+00	3.3080E+00	3.4598E+00
S	1.3171E+00	1.4029E+00	1.4345E+00
Z	1.0589E+00	1.2054E+00	1.2517E+00
GAME	8.5450E-01	8.6433E-01	8.6811E-01
U	8.8849E+00	1.1634E+00	1.1217E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0337E-12	5.8314E-10	1.6506E-09
O	2.7829E-03	2.7901E-02	4.1343E-02
O+	1.4141E-17	1.7772E-13	1.0367E-12
O++	3.5513E-75	3.4728E-56	2.7202E-55
O-	6.9939E-15	4.1478E-11	1.5483E-10
C2	5.3240E-02	1.4286E-01	1.6010E-01
O2+	1.0769E-12	7.2846E-10	2.1106E-09
O2-	3.6604E-14	1.0612E-10	3.1560E-10
C	3.3640E-15	3.0145E-11	1.4359E-10
C+	2.2924E-24	9.4013E-19	2.0677E-17
C++	4.9972E-61	1.0798E-45	8.1463E-45
C-	3.3610E-27	1.1291E-20	2.5027E-19
CO	1.0843E-01	3.1289E-01	3.6084E-01
CC+	3.2406E-16	2.0966E-12	9.3659E-12
CO2	8.3555E-01	5.1635E-01	4.3772E-01
C2	2.0369E-23	1.2652E-17	1.4670E-16

P1 = 5.00E+02 N/SQ-M, US1= 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4914E+02	1.9774E+03	2.4727E+03
T	9.8484E+00	1.1807E+01	1.2414E+01
RHC	1.5030E+01	1.2517E+02	1.4240E+02
H	4.8615E-01	4.3027E-02	-6.9692E-02
A	2.9108E+00	3.7180E+00	3.9110E+00
S	1.3821E+00	1.4943E+00	1.5305E+00
Z	1.1215E+00	1.3379E+00	1.3988E+00
GAME	8.5381E-01	8.7504E-01	8.8088E-01
U	1.6362E+01	1.2461E+00	1.2239E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.9584E-11	7.0689E-09	1.7644E-08
O	1.0787E-02	7.3805E-02	1.0226E-01
O+	9.3714E-16	1.0595E-11	4.6180E-11
O++	2.1261E-66	7.4414E-51	1.8105E-48
O-	2.6519E-13	8.6539E-10	2.6041E-09
C2	9.7568E-02	1.7911E-01	1.8315E-01
O2+	2.0699E-11	9.0875E-09	2.2918E-08
O2-	8.6576E-13	1.2334E-09	2.9722E-05
C	1.7263E-13	1.1584E-09	4.4482E-09
C+	2.7664E-22	5.6614E-16	4.6030E-15
C++	6.8757E-54	3.1571E-41	3.1767E-39
C-	5.4730E-25	6.8913E-18	5.8040E-17
CO	2.0574E-01	4.3137E-01	4.6792E-01
CC+	1.4413E-14	6.9672E-11	2.5568E-10
CO2	6.8531E-01	3.1572E-01	2.4667E-01
C2	3.2331E-21	2.7196E-15	1.8325E-14

P1 = 5.00E+02 N/SQ-M, US1= 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2943E+02	1.5992E+03	2.0126E+03
T	8.4512E+00	1.1146E+01	1.1697E+01
RHC	1.4076E+01	1.1311E+02	1.3015E+02
H	5.5266E-01	1.7078E-01	7.0477E-02
A	2.8013E+00	3.5057E+00	3.6762E+00
S	1.3491E+00	1.4480E+00	1.4819E+00
Z	1.0880E+00	1.2686E+00	1.3219E+00
GAME	8.5343E-01	8.6918E-01	8.7396E-01
U	9.6243E+00	1.1996E+00	1.1696E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.1568E-12	2.1636E-09	5.6758E-09
O	5.8869E-03	4.6977E-02	6.6990E-02
O+	1.4015E-16	1.5045E-12	7.3650E-12
O++	9.7084E-71	1.9721E-53	8.6419E-52
O-	5.0980E-14	2.0858E-10	6.8691E-10
C2	7.5404E-02	1.6508E-01	1.7686E-01
O2+	5.4128E-12	2.7562E-09	7.3576E-09
O2-	2.0772E-13	3.9862E-10	1.0541E-09
C	2.8858E-14	2.0293E-10	8.4765E-10
C+	4.1789E-23	2.9536E-17	3.3173E-16
C++	1.6091E-57	1.6627E-43	5.8756E-42
C-	7.4100E-26	3.6668E-19	4.2411E-18
CO	1.5589E-01	3.7643E-01	4.2005E-01
CC+	2.5712E-15	1.3108E-11	5.1816E-11
CO2	7.6282E-01	4.1151E-01	3.3609E-01
C2	3.4220E-22	2.1652E-16	1.7829E-15

P1 = 5.00E+02 N/SQ-M, US1= 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7022E+02	2.3980E+03	2.9877E+03
T	9.2262E+00	1.2498E+01	1.3180E+01
RHC	1.5918E+01	1.3578E+02	1.5293E+02
H	4.1507E-01	-9.3474E-02	-2.2044E-01
A	3.0235E+00	3.9464E+00	4.1672E+00
S	1.4162E+00	1.5416E+00	1.5801E+00
Z	1.1591E+00	1.4131E+00	1.4822E+00
GAME	8.5511E-01	8.8184E-01	8.8899E-01
U	1.1097E+01	1.3028E+00	1.2897E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.4737E-11	2.0545E-08	5.0820E-08
O	1.7943E-02	1.0973E-01	1.4835E-01
O+	6.8085E-15	5.8672E-11	2.6554E-10
O++	1.4216E-65	2.3556E-48	2.2923E-45
O-	1.1926E-12	3.0082E-09	8.6551E-09
C2	1.1966E-01	1.8293E-01	1.7727E-01
O2+	6.8829E-11	2.6418E-08	6.5236E-08
O2-	2.9823E-12	3.2344E-09	7.1947E-09
C	9.8966E-13	5.4730E-09	2.1640E-08
C+	1.0881E-20	6.2986E-15	5.8504E-14
C++	4.9356E-53	4.6208E-39	1.2560E-36
C-	2.7335E-23	7.6176E-17	6.7708E-16
CO	2.5651E-01	4.7498E-01	5.0231E-01
CC+	7.5514E-14	3.1119E-10	1.1678E-09
CO2	6.0589E-01	2.3236E-01	1.7207E-01
C2	5.1931E-20	2.3526E-14	1.6891E-13

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 3.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9266E+02	2.8585E+03	3.5564E+03
T	9.5915E+00	1.3230E+01	1.4014E+01
RHG	1.6733E+01	1.4464E+02	1.6146E+02
H	3.3942E-01	-2.3865E-01	-3.8202E-01
A	3.1414E+00	4.1929E+00	4.4480E+00
S	1.4513E+00	1.5891E+00	1.6304E+00
Z	1.2004E+00	1.4938E+00	1.5718E+00
GAME	8.5710E-01	8.8959E-01	8.9820E-01
U	1.1829E+01	1.3703E+00	1.3677E+00

SPECIES	MOLE FRACTIONS		
E-	1.7956E-10	5.5569E-08	1.3694E-07
O	2.7839E-02	1.5542E-01	2.0512E-01
O+	3.2660E-14	3.0206E-10	1.3918E-09
O++	1.4834E-62	5.8084E-46	4.4850E-43
O-	4.1612E-12	9.2522E-09	2.5462E-08
C2	1.3946E-01	1.7543E-01	1.5896E-01
O2+	1.9185E-10	7.0560E-08	1.7101E-07
O2-	8.4448E-12	7.3374E-09	1.5023E-08
C	4.1217E-12	2.4194E-08	9.8626E-08
C+	9.8004E-20	6.6162E-14	6.4407E-13
C++	1.2333E-50	3.4915E-37	1.5300E-34
C-	2.6992E-22	7.4570E-16	6.5870E-15
CO	3.0603E-01	5.0568E-01	5.2248E-01
CO+	2.9622E-13	1.2970E-09	5.0174E-09
CC2	5.2668E-01	1.6348E-01	1.1345E-01
C2	3.7942E-19	1.8652E-13	1.3862E-12

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 3.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4157E+02	3.8785E+03	4.8423E+03
T	1.0314E+01	1.4880E+01	1.6025E+01
RHO	1.8105E+01	1.5618E+02	1.7114E+02
H	1.7441E-01	-5.5463E-01	-7.3923E-01
A	3.3925E+00	4.7513E+00	5.1150E+00
S	1.5244E+00	1.6851E+00	1.7321E+00
Z	1.2937E+00	1.6689E+00	1.7656E+00
GAME	8.6259E-01	9.0908E-01	9.2472E-01
U	1.3284E+01	1.5420E+00	1.5657E+00

SPECIES	MOLE FRACTIONS		
E-	1.0438E-09	3.4411E-07	9.1576E-07
O	5.8062E-02	2.7186E-01	3.4017E-01
C+	4.9312E-13	6.9725E-09	3.9714E-08
O++	2.9842E-57	4.2171E-40	7.3576E-37
O-	3.4609E-11	6.2759E-08	1.6453E-07
C2	1.6928E-01	1.2922E-01	9.3712E-02
O2+	1.1222E-09	4.0393E-07	9.8080E-07
O2-	4.7405E-11	2.4597E-08	4.1038E-08
C	4.8823E-11	4.3524E-07	2.3367E-06
C+	4.0086E-18	7.3830E-12	1.1706E-10
C++	1.3396E-46	4.5671E-32	2.7842E-29
C-	1.2370E-20	5.6034E-14	6.5670E-13
CO	3.9595E-01	5.2977E-01	5.2709E-01
CO+	3.1813E-12	2.0554E-08	1.0071E-07
CC2	3.7671E-01	6.9143E-02	3.9017E-02
C2	1.1188E-17	1.0749E-11	1.2047E-10

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 3.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1645E+02	3.3541E+03	4.1759E+03
T	9.9519E+00	1.4017E+01	1.4941E+01
RHC	1.7466E+01	1.5151E+02	1.6767E+02
H	2.5910E-01	-3.9241E-01	-5.5475E-01
A	3.2640E+00	4.4598E+00	4.7594E+00
S	1.4874E+00	1.6371E+00	1.6812E+00
Z	1.2453E+00	1.5793E+00	1.6669E+00
GAME	8.5962E-01	8.9847E-01	9.0949E-01
U	1.2558E+01	1.4496E+00	1.4598E+00

SPECIES	MOLE FRACTIONS		
E-	4.4363E-10	1.4170E-07	3.5501E-07
O	4.1017E-02	2.1019E-01	2.7038E-01
C+	1.2390E-13	1.4912E-09	7.3164E-09
O++	1.8869E-56	1.1117E-42	6.9829E-40
C-	1.2350E-11	2.5410E-08	6.7526E-08
O2	1.5632E-01	1.5691E-01	1.2998E-01
O2+	4.7587E-10	1.7481E-07	4.2034E-07
O2-	2.0954E-11	1.4428E-08	2.6904E-08
C	1.4151E-11	1.0373E-07	4.6026E-07
C+	5.2323E-19	7.1910E-13	8.0726E-12
C++	3.0105E-48	2.6763E-34	6.5429E-32
C-	1.5948E-21	6.8281E-15	6.4441E-14
CO	3.5295E-01	5.2345E-01	5.2981E-01
CO+	9.7657E-13	5.2394E-09	2.1771E-08
CC2	4.4972E-01	1.0945E-01	6.9837E-02
C2	1.9264E-18	1.4456E-12	1.2120E-11

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 4.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6802E+02	4.4249E+03	5.5570E+03
T	1.0681E+01	1.5865E+01	1.7430E+01
RHC	1.8651E+01	1.5840E+02	1.7108E+02
H	8.5054E-02	-7.2516E-01	-9.3762E-01
A	3.5276E+00	5.0776E+00	5.5530E+00
S	1.5621E+00	1.7329E+00	1.7829E+00
Z	1.3454E+00	1.7608E+00	1.8636E+00
GAME	8.6598E-01	9.2297E-01	9.4931E-01
U	1.4007E+01	1.6513E+00	1.7136E+00

SPECIES	MOLE FRACTIONS		
E-	2.3158E-09	8.2435E-07	2.6065E-06
O	7.9529E-02	3.3677E-01	4.0875E-01
C+	1.8205E-12	3.3254E-08	2.5357E-07
O++	6.8834E-56	2.0517E-37	1.9448E-33
C-	8.8602E-11	1.4254E-07	3.9202E-07
O2	1.7752E-01	9.5544E-02	5.4884E-02
O2+	2.4910E-09	8.8530E-07	2.2218E-06
O2-	5.8059E-11	3.6183E-08	5.2730E-08
C	1.5667E-10	1.9421E-06	1.5523E-05
C+	2.7377E-17	8.6073E-11	2.5911E-09
C++	4.2861E-45	1.0364E-29	2.5623E-26
C-	8.1946E-20	4.7252E-13	8.9609E-12
CO	4.3391E-01	5.2736E-01	5.1802E-01
CO+	9.7152E-12	8.4431E-08	5.7328E-07
CC2	3.0904E-01	4.0322E-02	1.8320E-02
C2	5.8235E-17	8.8491E-11	1.7878E-09

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9578E+02	4.9844E+03	6.3268E+03
T	1.1057E+01	1.7081E+01	1.9619E+01
RHO	1.9102E+01	1.5768E+02	1.6565E+02
H	-8.8647E-03	-9.0379E-01	-1.1538E+00
A	3.6698E+00	5.4627E+00	6.1601E+00
S	1.6006E+00	1.7797E+00	1.8331E+00
Z	1.4004E+00	1.8507E+00	1.9468E+00
GAME	8.6979E-01	9.4401E-01	9.9357E-01
U	1.4727E+01	1.7865E+00	1.9185E+00

SPECIES	MOLE FRACTIONS		
E-	4.8309E-09	2.0918E-06	1.1042E-05
O	1.0592E-01	3.9986E-01	4.6502E-01
C+	5.8711E-12	1.7709E-07	2.3253E-06
O++	4.9254E-56	3.0872E-34	2.1055E-29
C-	2.0743E-10	3.1058E-07	1.1064E-06
O2	1.8030E-01	6.0040E-02	2.1513E-02
O2+	5.1929E-09	1.8673E-06	4.6596E-06
O2-	1.8729E-10	4.5612E-08	5.8614E-08
C	4.5307E-10	1.0550E-05	2.0282E-04
C+	1.3763E-16	1.4055E-09	1.5039E-07
C++	6.5652E-44	6.3519E-27	1.5979E-22
C-	4.0748E-19	4.8983E-12	3.0229E-10
CO	4.6588E-01	5.1945E-01	5.0719E-01
CO+	2.6967E-11	4.0213E-07	5.0725E-06
CO2	2.4791E-01	2.0634E-02	6.0476E-03
C2	2.4660E-16	9.8717E-10	7.2399E-08

P1 = 5.00E+02 N/SQ-M, US1 = 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5522E+02	6.0759E+03	7.9568E+03
T	1.1851E+01	2.1354E+01	2.5253E+01
RHO	1.9723E+01	1.4379E+02	1.5452E+02
H	-2.1039E-01	-1.2831E+00	-1.6237E+00
A	3.9780E+00	6.5240E+00	6.8971E+00
S	1.6791E+00	1.8670E+00	1.9214E+00
Z	1.5197E+00	1.9788E+00	2.0391E+00
GAME	8.7864E-01	1.0073E+00	9.2382E-01
U	1.6158E+01	2.2189E+00	2.3641E+00

SPECIES	MOLE FRACTIONS		
E-	1.9082E-08	3.4471E-05	3.0201E-04
O	1.7423E-01	4.8527E-01	5.0647E-01
O+	5.9487E-11	8.8458E-06	5.4878E-05
O++	3.4652E-50	9.5331E-27	1.4869E-22
O-	9.6294E-10	2.2014E-06	1.1343E-05
C2	1.6804E-01	9.5369E-03	3.0328E-03
O2+	2.0338E-08	5.7548E-06	6.7814E-06
O2-	5.5166E-10	5.4241E-08	1.0083E-07
C	3.6422E-09	1.2769E-03	2.2436E-02
C+	3.9763E-15	2.3512E-06	1.2476E-04
C++	2.7853E-40	5.2664E-20	3.4813E-16
C-	9.8410E-18	3.7480E-09	3.4186E-07
CO	5.0974E-01	5.0134E-01	4.6667E-01
CO+	1.9949E-10	1.9779E-05	1.2738E-04
CO2	1.4790E-01	2.5103E-03	7.0146E-04
C2	4.4354E-15	9.9520E-07	6.7314E-05

P1 = 5.00E+02 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2485E+02	5.5410E+03	7.1510E+03
T	1.1446E+01	1.8786E+01	2.2926E+01
RHO	1.9460E+01	1.5291E+02	1.5641E+02
H	-1.0735E-01	-1.0900E+00	-1.3897E+00
A	3.8197E+00	5.9589E+00	6.6985E+00
S	1.6396E+00	1.8249E+00	1.8804E+00
Z	1.4585E+00	1.9290E+00	1.9942E+00
GAME	8.7399E-01	9.7988E-01	9.8143E-01
U	1.5444E+01	1.9678E+00	2.1917E+00

SPECIES	MOLE FRACTIONS		
E-	9.7236E-09	6.6744E-06	5.3495E-05
O	1.3751E-01	4.5323E-01	4.9271E-01
C+	1.8301E-11	1.1735E-06	2.0363E-05
O++	3.4362E-51	9.7243E-31	7.3056E-25
C-	4.5851E-10	7.2461E-07	4.4230E-06
O2	1.7715E-01	2.8573E-02	5.9469E-03
O2+	1.0424E-08	3.7003E-06	6.5974E-06
O2-	3.3341E-10	4.9841E-08	7.2001E-08
C	1.2699E-09	8.7453E-05	4.4572E-03
C+	6.4398E-16	4.1674E-08	1.3794E-05
C++	2.1118E-41	9.9556E-24	2.7055E-18
C-	1.8905E-18	8.6881E-11	2.6472E-08
CO	4.9122E-01	5.0975E-01	4.9519E-01
CO+	7.2748E-11	5.3334E-06	4.7261E-05
CO2	1.9412E-01	1.3412E-03	1.5115E-03
C2	9.9326E-16	5.0570E-08	6.4643E-06

P1 = 5.00E+02 N/SQ-M, US1 = 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8687E+02	6.6190E+03	8.7421E+03
T	1.2278E+01	2.3948E+01	2.6679E+01
RHO	1.9893E+01	1.3734E+02	1.5633E+02
H	-3.1798E-01	-1.4845E+00	-1.8580E+00
A	4.1458E+00	6.7610E+00	7.1202E+00
S	1.7190E+00	1.9054E+00	1.9601E+00
Z	1.5838E+00	2.0125E+00	2.0961E+00
GAME	8.8384E-01	9.4848E-01	9.0659E-01
U	1.6868E+01	2.4469E+00	2.4660E+00

SPECIES	MOLE FRACTIONS		
E-	3.6296E-08	1.6077E-04	6.0870E-04
O	2.1569E-01	4.9929E-01	5.2033E-01
C+	1.8480E-10	3.4368E-05	8.8997E-05
O++	4.3834E-48	9.8291E-24	2.2302E-21
C-	1.9102E-09	6.4216E-06	1.9844E-05
O2	1.5321E-01	3.8404E-03	2.2626E-03
O2+	3.8337E-08	6.2833E-06	6.9543E-06
O2-	8.5019E-10	6.9600E-08	1.3504E-07
C	1.0176E-08	1.0746E-02	4.7417E-02
C+	2.1684E-14	4.6538E-05	3.4032E-04
C++	1.6127E-38	3.3496E-17	3.6418E-15
C-	4.5715E-17	9.2679E-08	1.2475E-06
CO	5.2156E-01	4.8483E-01	4.2807E-01
CO+	5.3375E-10	8.0163E-05	1.9366E-04
CO2	1.0954E-01	9.3962E-04	4.6569E-04
C2	1.8589E-14	2.1952E-05	1.9493E-04

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

 $p_1 = 5.00\text{E}+02 \text{ N/SQ-M}, \quad US_1 = 5.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1978E+02	7.2000E+03	9.5065E+03
T	1.2735E+01	2.5614E+01	2.7742E+01
RHC	1.9971E+01	1.3657E+02	1.5878E+02
H	-4.3013E-01	-1.6959E+00	-2.0958E+00
A	4.3249E+00	6.9432E+00	7.3475E+00
S	1.7592E+00	1.9421E+00	1.9973E+00
Z	1.6505E+00	2.0563E+00	2.1583E+00
GAME	8.8987E-01	9.1439E-01	9.0166E-01
U	1.7575E+01	2.5745E+00	2.5284E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.7416E-08	3.9520E-04	9.6960E-04
O	2.6104E-01	5.1151E-01	5.3417E-01
O+	5.6342E-10	6.5030E-05	1.2389E-04
O++	4.0407E-46	3.3256E-22	1.3838E-20
C-	3.5992E-09	1.2669E-05	2.9379E-05
O2	1.3337E-01	2.4912E-03	1.9223E-03
O2+	7.0248E-08	6.3047E-06	7.2923E-06
O2-	1.2187E-09	9.2905E-08	1.7158E-07
C	2.8355E-08	3.0697E-02	7.3648E-02
C+	1.1677E-13	1.8995E-04	6.2472E-04
C++	7.6763E-37	7.9036E-16	1.6467E-14
C-	2.0255E-16	5.1926E-07	2.8201E-06
CO	5.2725E-01	4.5383E-01	3.8755E-01
CO+	1.4230E-09	1.4719E-04	2.4607E-04
CC2	7.8345E-02	5.5427E-04	3.4821E-04
C2	7.7293E-14	9.9255E-05	3.5709E-04

 $p_1 = 5.00\text{E}+02 \text{ N/SQ-M}, \quad US_1 = 5.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8926E+02	8.3564E+03	1.0954E+04
T	1.3804E+01	2.7731E+01	2.9506E+01
RHC	1.9808E+01	1.3853E+02	1.6164E+02
H	-6.6804E-01	-2.1445E+00	-2.5965E+00
A	4.7336E+00	7.3688E+00	7.8178E+00
S	1.8397E+00	2.0150E+00	2.0737E+00
Z	1.7893E+00	2.1752E+00	2.2968E+00
GAME	9.0717E-01	9.0016E-01	9.0185E-01
U	1.8973E+01	2.7177E+00	2.6495E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3051E-07	1.0580E-03	1.8965E-03
O	3.5800E-01	5.3791E-01	5.6179E-01
O+	5.8046E-09	1.2898E-04	2.1002E-04
O++	4.2977E-42	1.4755E-20	2.2613E-19
C-	1.1356E-08	2.8428E-05	5.2458E-05
C2	8.3373E-02	1.7184E-03	1.5620E-03
O2+	2.2624E-07	6.7463E-06	8.2975E-06
O2-	1.9692E-09	1.4734E-07	2.5026E-07
C	2.5856E-07	8.0433E-02	1.2699E-01
C+	4.5761E-12	7.0632E-04	1.4101E-03
C++	2.6307E-33	1.9156E-14	1.4693E-13
C-	4.4396E-15	2.9592E-06	8.3676E-06
CO	5.2425E-01	3.7708E-01	3.0482E-01
CO+	1.1781E-08	2.4745E-04	3.2911E-04
CC2	3.4376E-02	3.0075E-04	2.1094E-04
C2	1.7143E-12	3.7571E-04	7.1204E-04

 $p_1 = 5.00\text{E}+02 \text{ N/SQ-M}, \quad US_1 = 5.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5393E+02	7.7887E+03	1.0252E+04
T	1.2234E+01	2.6785E+01	2.8664E+01
RHC	1.9945E+01	1.3756E+02	1.6069E+02
H	-5.4682E-01	-1.9162E+00	-2.3422E+00
A	4.5185E+00	7.1525E+00	7.5807E+00
S	1.7995E+00	1.9784E+00	2.0352E+00
Z	1.7194E+00	2.1138E+00	2.2257E+00
GAME	8.9725E-01	9.0353E-01	9.0077E-01
U	1.8277E+01	2.6551E+00	2.5902E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2399E-07	6.9790E-04	1.3971E-03
O	3.0901E-01	5.2455E-01	5.4812E-01
O+	1.7521E-09	9.5869E-05	1.6354E-04
O++	3.6692E-44	2.9136E-21	6.1445E-20
C-	6.4968E-09	2.0058E-05	4.0274E-05
O2	1.0963E-01	1.9860E-03	1.7135E-03
O2+	1.2642E-07	6.4616E-06	7.7519E-06
O2-	1.6170E-09	1.1933E-07	2.1050E-07
C	8.1943E-08	5.4904E-02	1.0048E-01
C+	6.7469E-13	4.1515E-04	9.8069E-04
C++	3.8823E-35	5.0593E-15	5.3862E-14
C-	9.1083E-16	1.4497E-06	5.1781E-06
CO	5.2777E-01	4.1650E-01	3.4599E-01
CO+	3.9290E-09	2.0205E-04	2.9079E-04
CC2	5.3588E-02	3.9436E-04	2.6961E-04
C2	3.4024E-13	2.2440E-04	5.3597E-04

 $p_1 = 5.00\text{E}+02 \text{ N/SQ-M}, \quad US_1 = 5.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2567E+02	8.8674E+03	1.1575E+04
T	1.4497E+01	2.8556E+01	3.0303E+01
RHC	1.9511E+01	1.3858E+02	1.6111E+02
H	-7.9374E-01	-2.3801E+00	-2.8583E+00
A	4.9848E+00	7.5875E+00	8.0597E+00
S	1.8795E+00	2.0522E+00	2.1129E+00
Z	1.8585E+00	2.2407E+00	2.3709E+00
GAME	9.2231E-01	8.9975E-01	9.0415E-01
U	1.9660E+01	2.7727E+00	2.7087E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.4911E-07	1.4767E-03	2.4819E-03
O	4.0587E-01	5.5120E-01	5.7502E-01
O+	2.1452E-08	1.6630E-04	2.6592E-04
O++	4.8261E-40	5.7060E-20	7.4166E-19
C-	1.9601E-08	3.7672E-05	6.5831E-05
O2	5.6278E-02	1.5402E-03	1.4351E-03
O2+	4.0914E-07	7.1074E-06	8.8988E-06
O2-	2.1666E-09	1.7544E-07	2.8857E-07
C	9.4766E-07	1.0611E-01	1.5277E-01
C+	3.7432E-11	1.0605E-03	1.9241E-03
C++	4.5242E-32	5.5931E-14	3.5928E-13
C-	2.4884E-14	5.0816E-06	1.2410E-05
CO	5.1796E-01	3.3734E-01	2.6461E-01
CO+	4.0245E-08	2.8747E-04	3.6153E-04
CC2	1.9890E-02	2.3495E-04	1.6413E-04
C2	1.0506E-11	5.3426E-04	8.6982E-04

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 5.80E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1 = 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6294E+02	9.2563E+03	1.2033E+04
T	1.5441E+01	2.9299E+01	3.1067E+01
RHO	1.8966E+01	1.3682E+02	1.5826E+02
H	-9.2386E-01	-2.6213E+00	-3.1260E+00
A	5.3095E+00	7.8069E+00	8.3061E+00
S	1.9185E+00	2.0904E+00	2.1532E+00
Z	1.9223E+00	2.3091E+00	2.4474E+00
GAME	9.4978E-01	9.0087E-01	9.0739E-01
U	2.0330E+01	2.8231E+00	2.7681E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0061E+02	9.4070E+03	1.2180E+04
T	1.6518E+01	2.9964E+01	3.1794E+01
RHC	1.8016E+01	1.3193E+02	1.5170E+02
H	-1.0582E+00	-2.8652E+00	-3.3970E+00
A	5.7743E+00	8.0235E+00	8.5548E+00
S	1.5558E+00	2.1299E+00	2.1949E+00
Z	1.9705E+00	2.3797E+00	2.5254E+00
GAME	1.0001E+00	9.0285E-01	9.1148E-01
U	2.0970E+01	2.8682E+00	2.8321E+00

SPECIES	MOLE FRACTIONS		
E-	1.0225E-06	1.9595E-03	3.1727E-03
O	4.4909E-01	5.6419E-01	5.8766E-01
O+	1.0646E-07	2.0923E-04	3.3417E-04
O++	5.5109E-37	1.8110E-19	2.2438E-18
O-	3.5414E-08	4.7490E-05	7.9974E-05
C2	3.0912E-02	1.3996E-03	1.3145E-03
O2+	7.6244E-07	7.4910E-06	9.5078E-06
O2-	2.1068E-09	2.0086E-07	3.2100E-07
C	5.1856E-06	1.3134E-01	1.7753E-01
C+	6.5554E-10	1.4808E-03	2.5391E-03
C++	1.1719E-28	1.3796E-13	8.1672E-13
C-	2.3343E-13	7.7903E-06	1.7227E-05
CO	5.1045E-01	2.9818E-01	2.2584E-01
CO+	1.9048E-07	3.1747E-04	3.8744E-04
CC2	9.5389E-03	1.8420E-04	1.2537E-04
C2	1.2254E-10	6.8354E-04	9.9434E-04

SPECIES	MOLE FRACTIONS		
E-	3.4881E-06	2.5130E-03	3.9951E-03
O	4.8098E-01	5.7666E-01	5.9956E-01
C+	7.7101E-07	2.5877E-04	4.1812E-04
O++	3.0694E-33	5.1152E-19	6.3283E-18
C-	7.9366E-08	5.7147E-05	9.3866E-05
O2	1.1755E-02	1.2683E-03	1.1870E-03
O2+	1.3713E-06	7.8184E-06	1.0040E-05
O2-	1.8733E-09	2.1858E-07	3.4004E-07
C	5.5156E-05	1.5566E-01	2.0096E-01
C+	2.8055E-08	1.9728E-03	3.2786E-03
C++	3.6682E-25	3.0553E-13	1.7553E-12
C-	5.4305E-12	1.0921E-05	2.2534E-05
CO	5.0394E-01	2.6030E-01	1.8890E-01
CO+	1.3990E-06	3.4184E-04	4.0513E-04
CC2	3.2652E-03	1.4238E-04	9.2681E-05
C2	3.7309E-09	8.0630E-04	1.0703E-03

P1 = 5.00E+02 N/SQ-M, US1 = 6.20E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1 = 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3839E+02	9.3195E+03	1.2015E+04
T	1.9121E+01	3.0567E+01	3.2493E+01
RHO	1.6744E+01	1.2437E+02	1.4204E+02
H	-1.1966E+00	-3.1099E+00	-3.6668E+00
A	6.2343E+00	8.2372E+00	8.8049E+00
S	1.9900E+00	2.1707E+00	2.2376E+00
Z	1.9939E+00	2.4514E+00	2.6033E+00
GAME	1.0194E+00	9.0551E-01	9.1651E-01
U	2.1572E+01	2.9087E+00	2.8861E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7807E+02	9.4603E+03	1.2161E+04
T	2.1086E+01	3.1243E+01	3.3342E+01
RHO	1.5969E+01	1.1989E+02	1.3592E+02
H	-1.3398E+00	-3.3667E+00	-3.9529E+00
A	6.3371E+00	8.4707E+00	9.0907E+00
S	2.0213E+00	2.2107E+00	2.2796E+00
Z	2.0136E+00	2.5256E+00	2.6836E+00
GAME	9.4579E-01	9.0932E-01	9.2362E-01
U	2.2190E+01	2.9614E+00	2.9554E+00

SPECIES	MOLE FRACTIONS		
E-	2.1298E-05	3.1491E-03	4.9807E-03
O	4.9543E-01	5.8846E-01	6.1046E-01
C+	5.9488E-06	3.1645E-04	5.2254E-04
O++	4.4666E-29	1.2975E-18	1.6959E-17
O-	2.6410E-07	6.6194E-05	1.0683E-04
C2	3.2426E-03	1.1400E-03	1.0533E-03
O2+	1.8356E-06	8.0690E-06	1.0469E-05
O2-	1.9237E-09	2.2692E-07	3.4341E-07
C	1.0289E-03	1.7879E-01	2.2260E-01
C+	2.0747E-06	2.5465E-03	4.1650E-03
C++	3.1309E-21	6.2207E-13	3.6253E-12
C-	3.4155E-10	1.4296E-05	2.8012E-05
CO	4.9941E-01	2.2414E-01	1.5450E-01
CO+	1.1706E-05	3.5874E-04	4.1395E-04
CC2	8.4591E-04	1.0787E-04	6.5962E-05
C2	2.6030E-07	8.9253E-04	1.0909E-03

SPECIES	MOLE FRACTIONS		
E-	9.8881E-05	3.9225E-03	6.2745E-03
O	5.0220E-01	5.9976E-01	6.2059E-01
O+	2.0253E-05	3.9160E-04	6.7252E-04
O++	3.1077E-26	3.5029E-18	5.2479E-17
O-	7.7919E-07	7.7369E-05	1.2376E-04
C2	1.2888E-03	1.0364E-03	9.3461E-04
O2+	1.7900E-06	8.5067E-06	1.1184E-05
O2-	2.4757E-09	2.4105E-07	3.5461E-07
C	8.2401E-03	2.0110E-01	2.4301E-01
C+	3.5550E-05	3.2444E-03	5.3293E-03
C++	1.4330E-18	1.2912E-12	8.1026E-12
C-	8.2621E-09	1.8519E-05	3.5008E-05
CO	4.8775E-01	1.8903E-01	1.2148E-01
CO+	4.2078E-05	3.7413E-04	4.2064E-04
CC2	3.1528E-04	8.1037E-05	4.5178E-05
C2	5.3658E-06	9.5818E-04	1.0777E-03

TABLE I.-Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.2055E+02	9.9631E+03	1.2797E+04
T	2.2282E+01	3.2060E+01	3.4457E+01
RHO	1.5811E+01	1.1939E+02	1.3423E+02
M	-1.4881E+00	-3.6412E+00	-4.2640E+00
A	6.4310E+00	8.7372E+00	9.4371E+00
S	2.0512E+00	2.2494E+00	2.3206E+00
Z	2.0453E+00	2.6030E+00	2.7669E+00
GAME	9.0748E-01	9.1476E-01	9.3413E-01
U	2.2877E+01	3.0341E+00	3.0495E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3924E-04	4.9071E-03	8.1106E-03
O	5.1021E-01	6.1054E-01	6.2976E-01
O+	3.5048E-05	4.9666E-04	9.1099E-04
O++	7.4790E-25	1.0881E-17	2.1210E-16
C-	1.5284E-06	9.2574E-05	1.4822E-04
C2	8.3483E-04	9.5324E-04	8.2568E-04
O2+	1.6715E-06	9.2475E-06	1.2396E-05
O2-	3.2753E-09	2.6631E-07	3.7950E-07
C	2.2807E-02	2.2260E-01	2.6189E-01
C+	1.3215E-04	4.1283E-03	6.9546E-03
C++	2.5906E-17	2.8731E-12	2.1124E-11
C-	4.4877E-08	2.4212E-05	4.4772E-05
CO	4.6545E-01	1.5479E-01	8.9855E-02
CO+	7.1948E-05	3.8987E-04	4.2595E-04
CC2	1.9315E-04	5.9858E-05	2.9002E-05
C2	2.3307E-05	1.0054E-03	1.0275E-03

P1 = 5.00E+02 N/SQ-M, US1 = 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.1123E+02	1.1388E+04	1.4687E+04
T	2.3745E+01	3.4085E+01	3.7742E+01
RHO	1.6057E+01	1.2100E+02	1.3274E+02
M	-1.7992E+00	-4.2258E+00	-4.9491E+00
A	6.6985E+00	9.3662E+00	1.0360E+01
S	2.1100E+00	2.3255E+00	2.4023E+00
Z	2.1276E+00	2.7613E+00	2.9316E+00
GAME	8.8816E-01	9.3209E-01	9.7003E-01
U	2.4288E+01	3.2276E+00	3.3411E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2654E-04	7.8987E-03	1.5317E-02
O	5.2502E-01	6.2930E-01	6.4160E-01
O+	6.1845E-05	8.6416E-04	2.0559E-03
O++	2.2569E-23	1.4710E-16	8.4363E-15
C-	3.3903E-06	1.3450E-04	2.2281E-04
C2	5.6891E-04	7.8436E-04	5.7706E-04
O2+	1.6184E-06	1.1406E-05	1.6372E-05
O2-	5.0960E-09	3.2460E-07	4.1895E-07
C	5.9501E-02	2.6082E-01	2.8911E-01
C+	4.5263E-04	6.7881E-03	1.3130E-02
C++	4.8055E-16	1.7167E-11	2.5062E-10
C-	2.5521E-07	4.0419E-05	7.3901E-05
CO	4.0944E-01	9.1937E-02	3.6733E-02
CO+	1.1409E-04	4.1032E-04	4.1098E-04
CC2	1.1101E-04	2.8241E-05	8.0302E-06
C2	9.0141E-05	9.8362E-04	7.4810E-04

P1 = 5.00E+02 N/SQ-M, US1 = 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6507E+02	1.0634E+04	1.3675E+04
T	2.3100E+01	3.3000E+01	3.5887E+01
RHC	1.5890E+01	1.2015E+02	1.3366E+02
M	-1.6413E+00	-3.9285E+00	-4.5974E+00
A	6.5598E+00	9.0339E+00	9.8558E+00
S	2.0806E+00	2.2876E+00	2.3616E+00
Z	2.0844E+00	2.6820E+00	2.8509E+00
GAME	8.9372E-01	9.2212E-01	9.4943E-01
U	2.3578E+01	3.1226E+00	3.1808E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.1790E-04	6.1829E-03	1.0877E-02
O	5.1937E-01	6.2050E-01	6.3722E-01
O+	4.8510E-05	6.4517E-04	1.3147E-03
O++	5.3411E-24	3.7360E-17	1.1267E-15
C-	2.4036E-06	1.1151E-04	1.8076E-04
C2	6.5993E-04	8.7215E-04	7.0793E-04
O2+	1.6205E-06	1.0215E-05	1.4090E-05
O2-	4.1546E-09	2.9572E-07	4.0461E-07
C	4.0528E-02	2.4271E-01	2.7800E-01
C+	2.7510E-04	5.2680E-03	9.3627E-03
C++	1.4325E-16	6.7555E-12	6.5348E-11
C-	1.2455E-07	3.1452E-05	5.7644E-05
CO	4.3841E-01	1.2220E-01	6.0911E-02
CO+	9.5206E-05	4.0272E-04	4.2426E-04
CC2	1.4076E-04	4.2453E-05	1.6580E-05
C2	5.2778E-05	1.0176E-03	9.1874E-04

P1 = 5.00E+02 N/SQ-M, US1 = 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5892E+02	1.2195E+04	1.5806E+04
T	2.4299E+01	3.5375E+01	4.0156E+01
RHC	1.6262E+01	1.2142E+02	1.3097E+02
M	-1.5617E+00	-4.5326E+00	-5.3214E+00
A	6.8402E+00	9.7463E+00	1.0932E+01
S	2.1355E+00	2.3631E+00	2.4427E+00
Z	2.1737E+00	2.8393E+00	3.0054E+00
GAME	8.8585E-01	9.6574E-01	9.9020E-01
U	2.5002E+01	3.3533E+00	3.5419E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.6264E-04	1.0329E-02	2.2728E-02
O	5.3863E-01	6.3645E-01	6.4098E-01
O+	7.5853E-05	1.2078E-03	3.5087E-03
O++	7.3665E-23	6.8403E-16	9.0166E-14
C-	4.4910E-06	1.6249E-04	2.7539E-04
C2	5.1195E-04	6.8570E-04	4.4209E-04
O2+	1.6473E-06	1.2876E-05	1.9426E-05
O2-	6.1012E-09	3.4891E-07	4.1440E-07
C	7.8861E-02	2.7612E-01	2.9245E-01
C+	6.5955E-04	8.9123E-03	1.9185E-02
C++	1.2563E-15	4.8449E-11	1.2039E-09
C-	4.4275E-07	5.1420E-05	9.3132E-05
CO	3.7984E-01	6.4744E-02	1.9388E-02
CO+	1.3013E-04	4.1055E-04	3.8394E-04
CC2	9.0834E-05	1.7122E-05	3.2059E-06
C2	1.3214E-04	8.9681E-04	5.4227E-04

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1= 7.40E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1= 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.0802E+02	1.3030E+04	1.7001E+04
T	2.4801E+01	3.6959E+01	4.2993E+01
RMC	1.6476E+01	1.2101E+02	1.2876E+02
H	-2.1289E+00	-4.8475E+00	-5.7113E+00
A	6.9842E+00	1.0187E+01	1.1474E+01
S	2.1693E+00	2.4001E+00	2.4819E+00
Z	2.2221E+00	2.9134E+00	3.0712E+00
GAME	8.8511E-01	9.6372E-01	9.9701E-01
U	2.5719E+01	3.5063E+00	3.7712E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5850E+02	1.3882E+04	1.8252E+04
T	2.5273E+01	3.8897E+01	4.5886E+01
RMC	1.6689E+01	1.1976E+02	1.2696E+02
H	-2.3006E+00	-5.1702E+00	-6.1131E+00
A	7.1307E+00	1.0674E+01	1.1938E+01
S	2.1994E+00	2.4358E+00	2.5193E+00
Z	2.2725E+00	2.9801E+00	3.1330E+00
GAME	8.8532E-01	9.8297E-01	9.9142E-01
U	2.6436E+01	3.6903E+00	4.0008E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.1282E-03	1.3970E-02	3.4012E-02
O	5.4866E-01	6.4112E-01	6.3404E-01
C+	9.1175E-05	1.7869E-03	6.1591E-03
O++	2.0924E-22	4.0267E-15	1.0703E-12
C-	5.7193E-06	1.9665E-04	3.3289E-04
O2	4.7177E-04	5.7572E-04	3.2769E-04
O2+	1.6968E-06	1.4713E-05	2.3141E-05
O2-	7.1754E-09	3.6362E-07	3.9207E-07
C	9.8305E-02	2.8729E-01	2.8673E-01
C+	8.9759E-04	1.2029E-02	2.7927E-02
C++	2.8573E-15	1.5845E-10	6.1072E-09
C-	6.9406E-07	6.4682E-05	1.1216E-04
CO	3.5005E-01	4.1781E-02	9.6238E-03
CC+	1.4419E-04	4.0110E-04	3.4828E-04
CO2	7.5647E-05	9.1520E-06	1.1666E-06
C2	1.7647E-04	7.5850E-04	3.6128E-04

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.4260E-03	1.9524E-02	4.8431E-02
O	5.5838E-01	6.4214E-01	6.2188E-01
C+	1.0833E-04	2.7989E-03	1.0221E-02
O++	5.4571E-22	2.9700E-14	9.8359E-12
C-	7.0867E-06	2.3718E-04	3.8568E-04
O2	4.4101E-04	4.6248E-04	2.4696E-04
O2+	1.7624E-06	1.7001E-05	2.7060E-05
O2-	8.3189E-09	3.6473E-07	3.6261E-07
C	1.1760E-01	2.9253E-01	2.7472E-01
C+	1.1673E-03	1.6644E-02	3.8384E-02
C++	5.9489E-15	5.9720E-10	2.5891E-08
C-	1.0158E-06	7.9818E-05	1.2717E-04
CC	3.2042E-01	2.4597E-02	5.0271E-03
CO+	1.5670E-04	3.8120E-04	3.1285E-04
CC2	6.2512E-05	4.2798E-06	4.5482E-07
C2	2.2107E-04	5.8933E-04	2.3810E-04

P1 = 5.00E+02 N/SQ-M, US1= 7.80E+03 M/SEC

P1 = 5.00E+02 N/SQ-M, US1= 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0103E+03	1.4743E+04	1.9540E+04
T	2.5727E+01	4.1241E+01	4.8652E+01
RMC	1.6854E+01	1.1756E+02	1.2568E+02
H	-2.4765E+00	-5.5005E+00	-6.5227E+00
A	7.2800E+00	1.1172E+01	1.2360E+01
S	2.2297E+00	2.4713E+00	2.5556E+00
Z	2.3246E+00	3.0408E+00	3.1956E+00
GAME	8.8618E-01	9.9527E-01	9.8268E-01
U	2.7152E+01	3.9068E+00	4.2140E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0635E+03	1.5619E+04	2.0855E+04
T	2.6174E+01	4.3723E+01	5.1184E+01
RMC	1.7085E+01	1.1539E+02	1.2503E+02
H	-2.6578E+00	-5.8388E+00	-6.9393E+00
A	7.4328E+00	1.1607E+01	1.2753E+01
S	2.2604E+00	2.5050E+00	2.5902E+00
Z	2.2783E+00	3.0958E+00	3.2588E+00
GAME	8.8754E-01	9.9533E-01	9.7509E-01
U	2.7869E+01	4.1316E+00	4.4087E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.7604E-03	2.8034E-02	6.4859E-02
O	5.6756E-01	6.3841E-01	6.0617E-01
C+	1.2788E-04	4.6078E-03	1.5687E-02
O++	1.3401E-21	2.6688E-13	6.4367E-11
C-	8.6078E-06	2.8318E-04	4.2910E-04
C2	4.1585E-04	3.5578E-04	1.9204E-04
O2+	1.8420E-06	1.9809E-05	3.0843E-05
O2-	9.5300E-09	3.5036E-07	3.3220E-07
C	1.3661E-01	2.9068E-01	2.5977E-01
C+	1.4728E-03	2.3434E-02	4.9427E-02
C++	1.1669E-14	2.5394E-09	8.7135E-08
C-	1.4155E-06	9.5796E-05	1.3700E-04
CO	2.9116E-01	1.3306E-02	2.8569E-03
CC+	1.6789E-04	3.5194E-04	2.8085E-04
CO2	5.3437E-05	1.7641E-06	1.9929E-07
C2	2.6425E-04	4.1986E-04	1.6046E-04

SPECIES	-----	MOLE FRACTIONS	-----
E-	2.1375E-03	3.9260E-02	8.1891E-02
C	5.7732E-01	6.3011E-01	5.8860E-01
O+	1.5051E-04	7.4143E-03	2.2244E-02
O++	3.1677E-21	2.1387E-12	3.0064E-10
O-	1.0300E-05	3.2804E-04	4.6198E-04
O2	3.9400E-04	2.7357E-04	1.5470E-04
O2+	1.9348E-06	2.2867E-05	3.4248E-05
O2-	1.0804E-08	3.2789E-07	3.0440E-07
C	1.5523E-01	2.8265E-01	2.4436E-01
C+	1.8194E-03	3.1941E-02	5.9963E-02
C++	2.1996E-14	9.9217E-09	2.3397E-07
C-	1.9016E-06	1.0972E-04	1.4217E-04
CO	2.6241E-01	7.2720E-03	1.7768E-03
CC+	1.7789E-04	3.2051E-04	2.5334E-04
CO2	4.4845E-05	7.3556E-07	9.9165E-08
C2	3.0447E-04	2.9024E-04	1.1243E-04

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1180E+03	1.6515E+04	2.2193E+04
T	2.6620E+01	4.6167E+01	5.3528E+01
RHO	1.7260E+01	1.1358E+02	1.2475E+02
H	-2.8432E+00	-6.1854E+00	-7.3630E+00
A	7.5900E+00	1.1991E+01	1.3131E+01
S	2.2913E+00	2.5376E+00	2.6237E+00
Z	2.4334E+00	3.1495E+00	3.3234E+00
GAME	8.8936E-01	9.8888E-01	9.6917E-01
U	2.8584E+01	4.3492E+00	4.5881E+00

SPECIES	MOLE FRACTIONS		
E-	2.5658E-03	5.2538E-02	9.9107E-02
O	5.8643E-01	6.1839E-01	5.6981E-01
O+	1.7710E-04	1.1291E-02	2.9752E-02
O++	7.3279E-21	1.3425E-11	1.0987E-09
O-	1.2183E-05	3.6754E-04	4.8568E-04
C2	3.7395E-04	2.1472E-04	1.2765E-04
O2+	2.0358E-06	2.5937E-05	3.7227E-05
O2-	1.2134E-08	3.0318E-07	2.7867E-07
C	1.7338E-01	2.7094E-01	2.2933E-01
C+	2.2146E-03	4.1418E-02	6.9717E-02
C++	4.0449E-14	3.2762E-08	5.3353E-07
C-	2.4836E-06	1.2019E-04	1.4381E-04
CO	2.3427E-01	4.2045E-03	1.1792E-03
CO+	1.8676E-04	2.9093E-04	2.2915E-04
CC2	3.7380E-05	3.3158E-07	5.4041E-08
CC2	3.4031E-04	2.0194E-04	8.1137E-05

P1 = 5.00E+02 N/SQ-M, US1 = 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2309E+03	1.8361E+04	2.4907E+04
T	2.7543E+01	5.0650E+01	5.7797E+01
RHO	1.7544E+01	1.1119E+02	1.2467E+02
H	-3.2277E+00	-6.9045E+00	-8.2337E+00
A	7.9217E+00	1.2688E+01	1.3859E+01
S	2.3535E+00	2.6002E+00	2.6886E+00
Z	2.5473E+00	3.2602E+00	3.4567E+00
GAME	8.9445E-01	9.7483E-01	9.6138E-01
U	3.0008E+01	4.7416E+00	4.9138E+00

SPECIES	MOLE FRACTIONS		
E-	3.6275E-03	8.2188E-02	1.3321E-01
O	6.0376E-01	5.8878E-01	5.2993E-01
C+	2.4751E-04	2.1946E-02	4.7095E-02
O++	3.9197E-20	2.4833E-10	8.8295E-09
O-	1.6634E-05	4.2502E-04	5.1031E-04
C2	3.3570E-04	1.4258E-04	9.0777E-05
O2+	2.2889E-06	3.1495E-05	4.1793E-05
O2-	1.4911E-08	2.5670E-07	2.3173E-07
C	2.0759E-01	2.4377E-01	2.0162E-01
C+	3.1973E-03	6.0526E-02	8.6535E-02
C++	1.3349E-13	2.1415E-07	1.9863E-06
C-	3.9830E-06	1.3062E-04	1.3984E-04
CO	1.8020E-01	1.7090E-03	5.9165E-04
CO+	2.0099E-04	2.4087E-04	1.8794E-04
CC2	2.5026E-05	8.8579E-08	1.9238E-08
CC2	3.9356E-04	1.0473E-04	4.4977E-05

P1 = 5.00E+02 N/SQ-M, US1 = 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1738E+03	1.7430E+04	2.3546E+04
T	2.7074E+01	4.8480E+01	5.5722E+01
RHO	1.7414E+01	1.1221E+02	1.2467E+02
H	-3.0332E+00	-6.5407E+00	-7.7944E+00
A	7.7526E+00	1.2347E+01	1.3498E+01
S	2.3225E+00	2.5693E+00	2.6564E+00
Z	2.4897E+00	3.2041E+00	3.3894E+00
GAME	8.9164E-01	9.8139E-01	9.6470E-01
U	2.9297E+01	4.5526E+00	4.7555E+00

SPECIES	MOLE FRACTIONS		
E-	3.0570E-03	6.7039E-02	1.1626E-01
O	5.9526E-01	6.0437E-01	5.5017E-01
O+	2.0886E-04	1.6168E-02	3.8077E-02
O++	1.6859E-20	6.4723E-11	3.3389E-09
C-	1.4284E-05	3.9988E-04	5.0144E-04
O2	3.5480E-04	1.7300E-04	1.0707E-04
O2+	2.1576E-06	2.8843E-05	3.9748E-05
O2-	1.3509E-08	2.7921E-07	2.5456E-07
C	1.9099E-01	2.5758E-01	2.1503E-01
C+	2.6690E-03	5.1105E-02	7.8579E-02
C++	7.3494E-14	9.0414E-08	1.0777E-06
C-	3.1728E-06	1.2700E-04	1.4280E-04
CO	2.0684E-01	2.6018E-03	8.2082E-04
CO+	1.9448E-04	2.6445E-04	2.0752E-04
CC2	3.0820E-05	1.6435E-07	3.1481E-08
C2	3.7043E-04	1.4371E-04	5.9857E-05

P1 = 5.00E+02 N/SQ-M, US1 = 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2892E+03	1.9298E+04	2.6267E+04
T	2.8036E+01	5.2690E+01	5.9775E+01
RHO	1.7647E+01	1.1038E+02	1.2465E+02
H	-3.4268E+00	-7.2767E+00	-8.6811E+00
A	8.0992E+00	1.3019E+01	1.4215E+01
S	2.3856E+00	2.6306E+00	2.7203E+00
Z	2.6058E+00	3.3181E+00	3.5253E+00
GAME	8.9751E-01	9.6954E-01	9.5897E-01
U	3.0717E+01	4.9180E+00	5.0651E+00

SPECIES	MOLE FRACTIONS		
E-	4.3010E-03	9.7631E-02	1.4989E-01
O	6.1188E-01	5.7208E-01	5.0928E-01
C+	2.9558E-04	2.8526E-02	5.6694E-02
O++	9.3548E-20	7.9294E-10	2.0906E-08
C-	1.9278E-05	4.4349E-04	5.1312E-04
C2	3.1607E-04	1.1953E-04	7.7487E-05
O2+	2.4367E-06	3.3841E-05	4.3349E-05
O2-	1.6319E-08	2.3557E-07	2.0999E-07
C	2.2427E-01	2.3013E-01	1.8910E-01
C+	3.8210E-03	6.9427E-02	9.3623E-02
C++	2.4505E-13	4.4921E-07	3.4090E-06
C-	4.9313E-06	1.3165E-04	1.3544E-04
CO	1.5445E-01	1.1771E-03	4.3788E-04
CO+	2.0619E-04	2.1967E-04	1.7008E-04
CC2	1.9910E-05	5.1039E-08	1.2151E-08
C2	4.0844E-04	7.7895E-05	3.4225E-05

TABLE I. - Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1 = 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3487E+03	2.0233E+04	2.7613E+04
T	2.8564E+01	5.4616E+01	6.1672E+01
RHO	1.7718E+01	1.0968E+02	1.2455E+02
H	-3.6305E+00	-7.6570E+00	-9.1367E+00
A	8.2874E+00	1.3345E+01	1.4569E+01
S	2.4174E+00	2.6606E+00	2.7517E+00
Z	2.6650E+00	3.3776E+00	3.5950E+00
GAME	9.0223E-01	9.6538E-01	9.5731E-01
U	3.1422E+01	5.0835E+00	5.2110E+00

SPECIES	MOLE FRACTIONS		
E-	5.1129E-03	1.1315E-01	1.6625E-01
O	6.1955E-01	5.5456E-01	4.8834E-01
O+	3.5648E-04	3.5815E-02	6.6770E-02
O++	2.3305E-19	2.1978E-09	4.5343E-08
O-	2.2272E-05	4.5592E-04	5.1056E-04
O2	2.9540E-04	1.0144E-04	6.6391E-05
O2+	2.6017E-00	3.5845E-05	4.4412E-05
O2-	1.7700E-08	2.1559E-07	1.8921E-07
C	2.3974E-01	2.1697E-01	1.7746E-01
C+	4.5718E-03	7.7685E-02	9.9908E-02
C++	4.6033E-13	8.5648E-07	5.5303E-06
C-	6.0356E-06	1.3064E-04	1.3000E-04
CO	1.2970E-01	8.4095E-04	3.3051E-04
CO+	2.0950E-04	2.0040E-04	1.5370E-04
CC2	1.5417E-05	3.0898E-08	7.9316E-09
C2	4.1379E-04	5.8891E-05	2.6304E-05

P1 = 5.00E+02 N/SQ-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4713E+03	2.2037E+04	3.0194E+04
T	2.9792E+01	5.8188E+01	6.5303E+01
RHO	1.7737E+01	1.0818E+02	1.2365E+02
H	-4.0513E+00	-8.4407E+00	-1.0072E+01
A	8.7116E+00	1.3982E+01	1.5277E+01
S	2.4812E+00	2.7200E+00	2.8148E+00
Z	2.7843E+00	3.5007E+00	3.7393E+00
GAME	9.1490E-01	9.5973E-01	9.5578E-01
U	3.2821E+01	5.3895E+00	5.4910E+00

SPECIES	MOLE FRACTIONS		
E-	7.4030E-03	1.4394E-01	1.9825E-01
O	6.3316E-01	5.1782E-01	4.4568E-01
O+	5.4931E-04	5.2165E-02	8.8186E-02
O++	1.8050E-18	1.2152E-08	1.7583E-07
O-	2.969E-05	4.6480E-04	4.9102E-04
C2	2.4896E-04	7.4671E-05	4.8681E-05
O2+	3.0042E-06	3.8727E-05	4.5036E-05
O2-	2.0187E-08	1.7820E-07	1.4982E-07
C	2.6747E-01	1.9255E-01	1.5636E-01
C+	6.6774E-03	9.2150E-02	1.1048E-01
C++	1.8512E-12	2.5155E-06	1.2890E-05
C-	8.8624E-06	1.2418E-04	1.1684E-04
CO	8.3834E-02	4.6429E-04	1.9508E-04
CO+	2.1176E-04	1.6642E-04	1.2440E-04
CC2	8.1996E-06	1.2618E-08	3.5097E-09
C2	3.9088E-04	2.4887E-05	1.5777E-05

P1 = 5.00E+02 N/SQ-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4095E+03	2.1151E+04	2.8930E+04
T	2.9143E+01	5.6464E+01	6.3503E+01
RHO	1.7750E+01	1.0892E+02	1.2427E+02
H	-3.8386E+00	-8.0452E+00	-9.6003E+00
A	8.4899E+00	1.3669E+01	1.4920E+01
S	2.4493E+00	2.6908E+00	2.7830E+00
Z	2.7247E+00	3.4392E+00	3.6658E+00
GAME	9.0773E-01	9.6214E-01	9.5628E-01
U	3.2124E+01	5.2403E+00	5.3527E+00

SPECIES	MOLE FRACTIONS		
E-	6.1177E-03	1.2880E-01	1.8227E-01
O	6.2670E-01	5.3620E-01	4.6725E-01
O+	4.3799E-04	4.3821E-02	7.7229E-02
O++	6.1963E-19	5.4699E-09	9.1510E-08
O-	2.5698E-05	4.6277E-04	5.0320E-04
O2	2.7319E-04	8.6617E-05	5.6965E-05
O2+	2.7888E-06	3.7487E-05	4.4981E-05
O2-	1.9010E-08	1.9615E-07	1.6933E-07
C	2.5422E-01	2.0427E-01	1.6664E-01
C+	5.4581E-03	8.5350E-02	1.0547E-01
C++	8.9770E-13	1.5229E-06	8.5725E-06
C-	7.3371E-06	1.2795E-04	1.2379E-04
CO	1.0609E-01	6.1576E-04	2.5320E-04
CO+	2.1187E-04	1.8249E-04	1.3862E-04
CC2	1.1517E-05	1.9344E-08	5.2620E-09
C2	4.0835E-04	4.4946E-05	2.0370E-05

P1 = 5.00E+02 N/SQ-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5242E+03	2.2866E+04	3.1373E+04
T	3.0542E+01	5.9854E+01	6.6990E+01
RHO	1.7666E+01	1.0718E+02	1.2289E+02
H	-4.2684E+00	-8.8421E+00	-1.0550E+01
A	8.9600E+00	1.4295E+01	1.5621E+01
S	2.5131E+00	2.7495E+00	2.8453E+00
Z	2.8435E+00	3.5642E+00	3.8110E+00
GAME	9.2447E-01	9.5794E-01	9.5577E-01
U	3.3512E+01	5.5320E+00	5.6261E+00

SPECIES	MOLE FRACTIONS		
E-	9.1120E-03	1.5907E-01	2.1328E-01
O	6.3873E-01	4.9890E-01	4.2495E-01
O+	7.0969E-04	6.1057E-02	9.8939E-02
O++	5.8406E-18	2.5192E-08	3.1403E-07
O-	3.4348E-05	4.6207E-04	4.7590E-04
C2	2.2221E-04	6.4599E-05	4.1798E-05
O2+	3.2571E-06	3.9560E-05	4.4660E-05
O2-	2.1141E-08	1.6052E-07	1.3223E-07
C	2.7911E-01	1.8137E-01	1.4714E-01
C+	8.2350E-03	9.8392E-02	1.1473E-01
C++	4.1023E-12	3.9751E-06	1.8526E-05
C-	1.0667E-05	1.1934E-04	1.0988E-04
CO	6.3261E-02	2.5466E-04	1.5305E-04
CO+	2.0910E-04	1.5129E-04	1.1183E-04
CC2	5.4701E-06	8.3640E-09	2.4017E-09
C2	3.6040E-04	2.7190E-05	1.2393E-05

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 9.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5979E+03	2.3609E+04	3.2426E+04
T	3.1437E+01	6.1446E+01	6.8651E+01
RHO	1.7524E+01	1.0588E+02	1.2157E+02
H	-4.4899E+00	-9.2515E+00	-1.1035E+01
A	9.2451E+00	1.4606E+01	1.5970E+01
S	2.5447E+00	2.7792E+00	2.8766E+00
Z	2.9006E+00	3.6290E+00	3.8852E+00
GAME	9.3731E-01	9.5668E-01	9.5619E-01
U	3.4193E+01	5.6682E+00	5.7585E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1501E-02	1.7397E-01	2.2826E-01
O	6.4302E-01	4.7975E-01	4.0391E-01
C+	9.5588E-04	7.0314E-02	1.1003E-01
O++	2.2979E-17	4.8843E-08	5.4212E-07
C-	1.9966E-05	4.5495E-04	4.5670E-04
O2	1.9306E-04	5.5560E-05	3.5627E-05
O2+	3.5616E-06	3.9963E-05	4.3789E-05
O2-	2.1748E-08	1.4339E-07	1.1504E-07
C	2.8847E-01	1.7083E-01	1.3831E-01
C+	1.0391E-02	1.0404E-01	1.1860E-01
C++	1.0228E-11	6.0220E-06	2.6105E-05
C-	1.2814E-05	1.1371E-04	1.0243E-04
CO	4.4885E-02	2.7433E-04	1.2006E-04
CC+	2.0327E-04	1.3719E-04	9.9934E-05
CO2	3.3419E-06	5.6319E-09	1.6380E-09
C2	3.1677E-04	2.1303E-05	9.7007E-06

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.05E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8269E+03	2.5281E+04	3.4776E+04
T	3.6195E+01	6.6483E+01	7.4072E+01
RHO	1.6424E+01	9.8385E+01	1.1300E+02
H	-5.2953E+00	-1.0719E+01	-1.2771E+01
A	1.0454E+01	1.5670E+01	1.7193E+01
S	2.6512E+00	2.8846E+00	2.9884E+00
Z	3.0732E+00	3.8647E+00	4.1545E+00
GAME	9.8242E-01	9.5561E-01	9.6060E-01
U	3.6490E+01	6.1008E+00	6.2018E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.1987E-02	2.2414E-01	2.7818E-01
O	6.3885E-01	4.1217E-01	3.3175E-01
C+	3.8866E-03	1.0458E-01	1.4905E-01
O++	1.1936E-14	3.3120E-07	2.7925E-06
C-	6.8677E-05	4.0201E-04	3.6868E-04
C2	9.0425E-05	3.2588E-05	1.9433E-05
O2+	5.2282E-06	3.8153E-05	3.7625E-05
O2-	1.9710E-08	8.9489E-08	6.3950E-08
C	2.8916E-01	1.3842E-01	1.1101E-01
C+	2.8029E-02	1.1988E-01	1.2932E-01
C++	6.3627E-10	2.0118E-05	7.4180E-05
C-	2.2751E-05	9.0495E-05	7.5758E-05
CO	7.6150E-03	1.1837E-04	5.1779E-05
CC+	1.5741E-04	9.5017E-05	6.5078E-05
CO2	2.6393E-07	1.5073E-09	4.2635E-10
C2	1.2492E-04	9.2620E-06	4.0908E-06

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.00E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6624E+03	2.4225E+04	3.3297E+04
T	3.2533E+01	6.2962E+01	7.0251E+01
RHO	1.7292E+01	1.0413E+02	1.1967E+02
H	-4.7157E+00	-9.6644E+00	-1.1524E+01
A	9.5745E+00	1.4912E+01	1.6318E+01
S	2.5761E+00	2.8090E+00	2.9082E+00
Z	2.9551E+00	3.6948E+00	3.9605E+00
GAME	9.5362E-01	9.5589E-01	9.5700E-01
U	3.4862E+01	5.7979E+00	5.8877E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4995E-02	1.8862E-01	2.4289E-01
O	6.4545E-01	4.6049E-01	3.8307E-01
C+	1.3571E-03	7.9851E-02	1.2116E-01
O++	1.1141E-16	8.9274E-08	8.9872E-07
C-	4.6758E-05	4.4365E-04	4.3423E-04
C2	1.6164E-04	4.7855E-05	3.0205E-05
O2+	3.9368E-06	3.9920E-05	4.2463E-05
O2-	2.1857E-08	1.2680E-07	9.8819E-08
C	2.9460E-01	1.6090E-01	1.2999E-01
C+	1.3502E-02	1.0914E-01	1.2206E-01
C++	2.9276E-11	8.7966E-06	3.5927E-05
C-	1.5346E-05	1.0745E-04	9.4783E-05
CO	2.9403E-02	2.1418E-04	9.4439E-05
CC+	1.9372E-04	1.2401E-04	8.8925E-05
CO2	1.8219E-06	3.8335E-09	1.1187E-09
C2	2.6185E-04	1.6749E-05	7.5956E-06

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.10E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5984E+03	2.6350E+04	3.6283E+04
T	4.0100E+01	6.9886E+01	7.7896E+01
RHO	1.5654E+01	9.3319E+01	1.0701E+02
H	-5.9109E+00	-1.1819E+01	-1.4075E+01
A	1.1141E+01	1.6442E+01	1.8101E+01
S	2.7216E+00	2.9592E+00	3.0673E+00
Z	3.1835E+00	4.0403E+00	4.3528E+00
GAME	9.7231E-01	9.5738E-01	9.6632E-01
U	3.8103E+01	6.4008E+00	6.5299E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.0161E-02	2.5780E-01	3.1101E-01
O	6.1591E-01	3.6433E-01	2.8267E-01
C+	9.8557E-03	1.3007E-01	1.7634E-01
O++	7.2115E-13	1.0275E-06	7.7208E-06
C-	8.9066E-05	3.5370E-04	3.0274E-04
C2	5.1990E-05	2.2045E-05	1.2192E-05
O2+	6.6923E-06	3.5096E-05	3.1981E-05
O2-	1.6388E-08	6.1618E-08	3.9715E-08
C	2.6129E-01	1.1916E-01	9.4706E-02
C+	5.0292E-02	1.2797E-01	1.3465E-01
C++	9.0997E-09	4.1190E-05	1.4340E-04
C-	2.8002E-05	7.4723E-05	5.9288E-05
CO	2.1375E-03	6.7413E-05	2.8509E-05
CC+	1.2366E-04	7.2076E-05	4.6811E-05
CO2	4.3269E-08	6.1684E-10	1.6263E-10
C2	5.5232E-05	5.2221E-06	2.2112E-06

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1= 1.15E+04 M/SEC

P1 = 5.00E+02 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1795E+03	2.7848E+04	3.8426E+04
T	4.3478E+01	7.3368E+01	8.2051E+01
RHO	1.5182E+01	8.9917E+01	1.0276E+02
H	-6.5515E+00	-1.2979E+01	-1.5462E+01
A	1.1745E+01	1.7252E+01	1.9088E+01
S	2.7884E+00	3.0320E+00	3.1450E+00
Z	3.3018E+00	4.2213E+00	4.5572E+00
GAME	9.6092E-01	9.6106E-01	9.7441E-01
U	3.9750E+01	6.7216E+00	6.8893E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3698E+03	2.9659E+04	4.1061E+04
T	4.6423E+01	7.6984E+01	8.6628E+01
RHC	1.4891E+01	8.7431E+01	9.9465E+01
H	-7.2210E+00	-1.4197E+01	-1.6935E+01
A	1.2322E+01	1.8108E+01	2.0165E+01
S	2.8530E+00	3.1035E+00	3.2216E+00
Z	3.4281E+00	4.4064E+00	4.7654E+00
GAME	9.5405E-01	9.6661E-01	9.8499E-01
U	4.1421E+01	7.0649E+00	7.2906E+00

SPECIES	MOLE FRACTIONS	
E-	5.2524E-02	2.8956E-01
O	5.8536E-01	3.1749E-01
C+	1.9271E-02	1.5580E-01
O++	1.4000E-11	2.8802E-06
C-	1.0249E-04	3.0489E-04
O2+	3.3869E-05	1.4769E-05
O2	7.9819E-06	3.1395E-05
O2-	1.3606E-08	4.1796E-08
C	2.2846E-01	1.0268E-01
C+	7.3278E-02	1.3388E-01
C++	6.0399E-08	7.9295E-05
C-	2.9819E-05	6.1086E-05
CO	8.0752E-04	3.9025E-05
CC+	9.9403E-05	5.4186E-05
CO2	1.0912E-08	2.5822E-10
C2	2.7405E-05	2.9859E-06

SPECIES	MOLE FRACTIONS	
E-	1.2551E-01	3.1937E-01
O	5.5104E-01	2.7234E-01
O+	3.1740E-02	1.8115E-01
O++	1.3120E-10	7.5032E-06
O-	1.0986E-04	2.5608E-04
C2	2.3841E-05	9.6703E-06
O2+	9.0220E-06	2.7189E-05
O2-	1.1327E-08	2.7476E-08
C	1.9725E-01	8.8428E-02
C+	9.3818E-02	1.3815E-01
C++	2.4590E-07	1.4669E-04
C-	2.9350E-05	4.9186E-05
CO	3.7100E-04	2.2588E-05
CO+	8.1046E-05	4.0115E-05
CC2	3.6342E-09	1.0757E-10
C2	1.4852E-05	1.7079E-06

P1 = 5.00E+02 N/SQ-M, US1= 1.25E+04 M/SEC

P1 = 5.00E+02 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5688E+03	3.1683E+04	4.4089E+04
T	4.9074E+01	8.0790E+01	9.1764E+01
RHO	1.4703E+01	8.5359E+01	9.6546E+01
H	-7.9193E+00	-1.5469E+01	-1.8495E+01
A	1.2883E+01	1.9015E+01	2.1341E+01
S	2.9162E+00	3.1738E+00	3.2971E+00
Z	3.5601E+00	4.5943E+00	4.9743E+00
GAME	9.5002E-01	9.7408E-01	9.9778E-01
U	4.3106E+01	7.4358E+00	7.7398E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7766E+03	3.3848E+04	4.7367E+04
T	5.1540E+01	8.4861E+01	9.7620E+01
RHC	1.4570E+01	8.3384E+01	9.3682E+01
H	-8.6463E+00	-1.6794E+01	-2.0145E+01
A	1.3439E+01	1.9981E+01	2.2611E+01
S	2.5788E+00	3.2432E+00	3.3717E+00
Z	3.6976E+00	4.7834E+00	5.1794E+00
GAME	9.4773E-01	9.8353E-01	1.0112E+00
U	4.4801E+01	7.8392E+00	8.2433E+00

SPECIES	MOLE FRACTIONS	
E-	1.5776E-01	3.4718E-01
O	5.1453E-01	2.2946E-01
O+	4.6822E-02	2.0554E-01
O++	7.7856E-10	1.8569E-05
O-	1.1264E-04	2.0830E-04
C2	1.7502E-05	6.1098E-06
O2+	9.7849E-06	2.2679E-05
O2-	9.4050E-09	1.7231E-08
C	1.6946E-01	7.5945E-02
C+	1.1100E-01	1.4127E-01
C++	7.3972E-07	2.6519E-04
C-	2.7621E-05	3.8775E-05
CO	1.9228E-04	1.2877E-05
CO+	6.6434E-05	2.9046E-05
CC2	1.4319E-09	4.3489E-11
C2	8.5296E-06	9.6441E-07

SPECIES	MOLE FRACTIONS	
E-	1.8897E-01	3.7297E-01
O	4.7642E-01	1.8934E-01
C+	6.4156E-02	2.2849E-01
O++	3.4418E-09	4.4538E-05
O-	1.1187E-04	1.6296E-04
C2	1.3098E-05	3.6756E-06
O2+	1.0255E-05	1.8110E-05
O2-	7.7369E-09	1.0145E-08
C	1.4525E-01	6.4834E-02
C+	1.2488E-01	1.4340E-01
C++	1.8349E-06	4.7565E-04
C-	2.5259E-05	2.9721E-05
CO	1.0724E-04	7.1191E-06
CO+	5.4397E-05	2.0408E-05
CC2	6.2261E-10	1.6643E-11
C2	5.0783E-06	5.3006E-07

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

P1 = 5.00E+02 N/SQ-M, US1= 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9928E+03	3.6126E+04	5.0924E+04
T	5.3866E+01	8.9293E+01	1.0429E+02
RHO	1.4473E+01	8.1385E+01	9.0859E+01
H	-9.4019E+00	-1.8171E+01	-2.1885E+01
A	1.3992E+01	2.1014E+01	2.3917E+01
S	3.0408E+00	3.3112E+00	3.4448E+00
Z	3.8387E+00	4.9711E+00	5.3740E+00
GAME	9.4673E-01	9.9479E-01	1.0206E+00
U	4.6502E+01	8.2739E+00	8.7995E+00

SPECIES	MOLE FRACTIONS		
E-	2.1874E-01	3.9663E-01	4.4186E-01
C	4.3762E-01	1.5256E-01	8.4132E-02
O+	8.3130E-02	2.4949E-01	2.8701E-01
O++	1.2255E-08	1.0522E-04	9.4492E-04
O-	1.0840E-04	1.2183E-04	5.5542E-05
C2	9.8917E-06	2.0806E-06	4.6008E-07
O2+	1.0426E-05	1.3762E-05	6.4214E-06
O2-	6.2935E-09	5.5303E-09	1.1685E-09
C	1.2457E-01	5.4842E-02	3.6905E-02
C+	1.3568E-01	1.4534E-01	1.4514E-01
C++	3.9633E-06	8.5663E-04	3.9358E-03
C-	2.2671E-05	2.2008E-05	1.0299E-05
CO	6.3017E-05	3.7660E-06	7.4529E-07
CO+	4.4435E-05	1.3810E-05	4.9209E-06
CO2	2.8979E-10	5.9006E-12	4.2806E-13
C2	3.1123E-06	2.7999E-07	5.6450E-08

P1 = 5.00E+02 N/SQ-M, US1= 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4498E+03	4.0836E+04	5.8561E+04
T	5.8288E+01	9.9615E+01	1.1895E+02
RHO	1.4326E+01	7.6944E+01	8.6140E+01
H	-1.0999E+01	-2.1067E+01	-2.5588E+01
A	1.5107E+01	2.3238E+01	2.6188E+01
S	3.1635E+00	3.4432E+00	3.5843E+00
Z	4.1313E+00	5.3278E+00	5.7152E+00
GAME	9.4773E-01	1.0174E+00	1.0088E+00
U	4.9908E+01	9.3035E+00	9.9472E+00

SPECIES	MOLE FRACTIONS		
E-	2.7402E-01	4.3701E-01	4.7516E-01
O	3.5982E-01	9.1658E-02	4.5522E-02
O+	1.2411E-01	2.8308E-01	2.9919E-01
O++	1.0130E-07	5.8020E-04	5.2037E-03
O-	9.5642E-05	5.8272E-05	2.0866E-05
C2	5.6063E-06	5.3668E-07	8.3333E-08
O2+	9.9398E-06	6.7157E-06	2.3664E-06
O2-	3.9590E-09	1.2511E-09	1.7285E-10
C	9.1900E-02	3.7645E-02	2.2815E-02
C+	1.4996E-01	1.4708E-01	1.3857E-01
C++	1.4186E-05	2.8754E-03	1.3505E-02
C-	1.7540E-05	1.0623E-05	3.9196E-06
CO	2.3798E-05	8.8536E-07	1.2592E-07
CO+	2.9174E-05	5.4979E-06	1.4746E-06
CO2	6.9752E-11	5.5350E-13	2.4157E-14
C2	1.2316E-06	6.6352E-08	9.3629E-09

P1 = 5.00E+02 N/SQ-M, US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2172E+03	3.8457E+04	5.4673E+04
T	5.6104E+01	9.4237E+01	1.1158E+02
RHO	1.4355E+01	7.9146E+01	8.8253E+01
H	-1.0186E+01	-1.9595E+01	-2.3703E+01
A	1.4546E+01	2.2121E+01	2.5134E+01
S	3.1023E+00	3.3789E+00	3.5158E+00
Z	3.9835E+00	5.1562E+00	5.5524E+00
GAME	9.4677E-01	1.0071E+00	1.0197E+00
U	4.8204E+01	8.7698E+00	9.3765E+00

SPECIES	MOLE FRACTIONS		
E-	2.4709E-01	4.1828E-01	4.5978E-01
O	3.9859E-01	1.1938E-01	6.1300E-02
O+	1.0327E-01	2.6814E-01	2.9651E-01
O++	3.7350E-08	2.4983E-04	2.3506E-03
O-	1.0282E-04	8.6078E-05	3.3741E-05
C2	7.4703E-06	1.0868E-06	1.9201E-07
O2+	1.0313E-05	9.8447E-06	3.8900E-06
O2-	5.0420E-09	2.7273E-09	4.4001E-10
C	1.0694E-01	4.5679E-02	2.9047E-02
C+	1.4388E-01	1.4658E-01	1.4333E-01
C++	7.7671E-06	1.5717E-03	7.6336E-03
C-	2.0061E-05	1.5557E-05	6.3276E-06
CO	3.8307E-05	1.8653E-06	3.0062E-07
CO+	3.6123E-05	8.8775E-06	2.6844E-06
CO2	1.4051E-10	1.8652E-12	9.7969E-13
C2	1.9451E-06	1.3906E-07	2.2707E-08

P1 = 5.00E+02 N/SQ-M, US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6902E+03	4.3240E+04	6.2499E+04
T	6.0447E+01	1.0556E+02	1.2583E+02
RHO	1.4258E+01	7.4630E+01	8.4669E+01
H	-1.1840E+01	-2.2586E+01	-2.7511E+01
A	1.5677E+01	2.4333E+01	2.7112E+01
S	3.2245E+00	3.5065E+00	3.6495E+00
Z	4.2818E+00	5.4887E+00	5.8663E+00
GAME	9.4958E-01	1.0219E+00	9.9581E-01
U	5.1609E+01	9.8713E+00	1.0452E+01

SPECIES	MOLE FRACTIONS		
E-	2.9952E-01	4.5351E-01	4.8868E-01
O	3.2173E-01	6.8996E-02	3.5237E-02
O+	1.4521E-01	2.9401E-01	2.9585E-01
O++	2.5133E-07	1.3322E-03	9.8227E-03
O-	8.7283E-05	3.7688E-05	1.3742E-05
C2	4.1604E-06	2.4871E-07	4.0305E-08
O2+	5.3447E-06	4.3510E-06	1.5110E-06
O2-	3.0504E-09	5.2976E-10	7.6990E-11
C	7.9031E-02	3.0491E-02	1.8187E-02
C+	1.5433E-01	1.4635E-01	1.3120E-01
C++	2.4606E-05	5.2602E-03	2.0996E-02
C-	1.5167E-05	6.9340E-06	2.5525E-06
CO	1.4971E-05	9.7447E-07	5.8519E-08
CO+	2.3370E-05	3.2477E-06	8.5156E-07
CO2	3.4978E-11	1.5003E-13	7.1514E-15
C2	7.8592E-07	2.9890E-08	4.2271E-09

TABLE I.- Continued

$$p_1 = 500 \text{ N/m}^2$$

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.55E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9389E+03	4.5674E+04	6.6453E+04
T	6.2620E+01	1.1179E+02	1.3219E+02
RHC	1.4182E+01	7.2505E+01	8.3562E+01
H	-1.2710E+01	-2.4154E+01	-2.9475E+01
A	1.6263E+01	2.5314E+01	2.7996E+01
S	3.2854E+00	3.5679E+00	3.7136E+00
Z	4.4352E+00	5.6353E+00	6.0158E+00
GAME	9.5231E-01	1.0172E+00	9.8557E-01
U	5.3310E+01	1.0445E+01	1.0896E+01

 $P_1 = 5.00E+02 \text{ N/SQ-M}, \quad US_1 = 1.60E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1951E+03	4.8149E+04	7.0396E+04
T	6.4830E+01	1.1801E+02	1.3799E+02
RHO	1.4097E+01	7.0673E+01	8.2769E+01
H	-1.3607E+01	-2.5772E+01	-3.1479E+01
A	1.6867E+01	2.6180E+01	2.8855E+01
S	3.3461E+00	3.6283E+00	3.7758E+00
Z	4.5902E+00	5.7731E+00	6.1637E+00
GAME	9.5599E-01	1.0060E+00	9.7898E-01
U	5.5004E+01	1.0988E+01	1.1291E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.2373E-01	4.6772E-01	5.0139E-01
O	2.8449E-01	5.2051E-02	2.8191E-02
C+	1.6632E-01	2.9995E-01	2.8795E-01
O++	5.8550E-07	2.8740E-03	1.6301E-02
C-	7.8057E-05	2.4147E-05	9.5611E-06
O2	3.0324E-06	1.1463E-07	2.1349E-08
O2+	8.5650E-06	2.7689E-06	1.0053E-06
O2-	2.2827E-09	2.2192E-10	3.8171E-11
C	6.7899E-02	2.4514E-02	1.4678E-02
C+	1.5739E-01	1.4366E-01	1.2211E-01
C++	4.1248E-05	9.1966E-03	2.9367E-02
C-	1.2951E-05	4.4931E-06	1.7384E-06
CO	9.4339E-06	1.7786E-07	2.9663E-08
CC+	1.8506E-05	1.8899E-06	5.1762E-07
CO2	1.7433E-11	4.0752E-14	2.4618E-15
C2	5.0122E-07	1.3323E-08	2.0619E-09

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.4656E-01	4.8043E-01	5.1335E-01
O	2.4854E-01	3.9971E-02	2.3206E-02
C+	1.8706E-01	3.0079E-01	2.7699E-01
O++	1.2997E-06	5.6504E-03	2.4273E-02
O-	6.8331E-05	1.5785E-05	6.9973E-06
C2	2.1617E-06	5.4923E-08	1.2287E-08
O2+	7.6491E-06	1.7781E-06	6.9532E-07
O2-	1.6550E-09	9.7096E-11	2.0872E-11
C	5.8243E-02	1.9696E-02	1.2028E-02
C+	1.5942E-01	1.3853E-01	1.1245E-01
C++	6.7515E-05	1.4907E-02	3.7686E-02
C-	1.0911E-05	2.9337E-06	1.2389E-06
CO	5.9177E-06	8.2470E-08	1.6329E-08
CC+	1.4459E-05	1.1101E-06	3.2866E-07
CO2	8.5549E-12	1.1855E-14	9.7633E-16
C2	3.1808E-07	6.0813E-09	1.0882E-09

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5790E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0747E+00	1.0878E+00	1.1070E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1125E-01
U	3.0950E+00	9.6609E-01	8.7896E-01

SPECIES	MOLE FRACTIONS		
E-	1.5208E-51	4.5372E-42	1.5958E-33
O	2.3031E-14	1.4725E-11	8.5539E-10
O+	1.4210E-37	9.4622E-34	6.6332E-31
O++	0.	0.	0.
O-	6.6138E-58	2.0109E-47	4.1151E-38
O2	4.3952E-04	4.3992E-04	4.4064E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0336E-51	4.9639E-42	3.7006E-34
C	7.4628E-53	6.5542E-44	6.5787E-36
C+	4.1170E-63	9.3500E-55	2.5079E-47
C++	0.	0.	0.
C-	1.0728E-97	9.7169E-81	6.5312E-65
CO	1.6158E-11	1.5555E-08	1.4568E-06
CO+	2.3571E-36	5.1642E-32	1.1270E-28
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	4.5772E-77	3.9775E-64	3.1154E-57

P1 = 1.00E+03 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9442E+02	2.9130E+02
T	3.8892E+00	5.6764E+00	6.4980E+00
RHO	8.0418E+00	3.4227E+01	4.4659E+01
H	8.8932E-01	8.0785E-01	7.6528E-01
A	1.8839E+00	2.2594E+00	2.4051E+00
S	1.1389E+00	1.1658E+00	1.1879E+00
Z	1.0000E+00	1.0007E+00	1.0039E+00
GAME	9.1254E-01	8.9863E-01	8.8682E-01
U	4.5382E+00	1.0668E+00	9.9449E-01

SPECIES	MOLE FRACTIONS		
E-	1.4128E-34	1.7393E-19	9.7144E-17
O	5.0665E-10	1.0930E-06	1.7142E-05
O+	2.1381E-31	4.4851E-27	1.2407E-23
O++	0.	0.	1.5405E-92
O-	1.6058E-39	1.9246E-22	1.6960E-19
O2	4.4030E-04	1.1789E-03	4.2609E-03
O2+	1.7597E-18	1.5751E-18	1.0637E-16
O2-	1.1775E-35	9.1272E-21	7.3033E-18
C	6.8039E-37	1.1286E-23	1.4740E-20
C+	3.0471E-48	5.5213E-36	1.7769E-32
C++	0.	3.5342E-85	1.2962E-75
C-	7.5875E-67	5.1637E-39	6.4767E-35
CO	7.6292E-07	1.4797E-03	7.6625E-03
CO+	2.8766E-29	3.3679E-24	2.5472E-21
CO2	9.9956E-01	9.9734E-01	9.8806E-01
C2	1.0883E-53	7.0230E-34	7.7010E-33

P1 = 1.00E+03 N/SQ-M, US1= 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2170E+02	1.9023E+02
T	3.1957E+00	4.5031E+00	5.2556E+00
RHO	7.1805E+00	2.7028E+01	3.6186E+01
H	9.1903E-01	8.6219E-01	8.2789E-01
A	1.7137E+00	2.0228E+00	2.1791E+00
S	1.1067E+00	1.1270E+00	1.1479E+00
Z	1.0000E+00	1.0000E+00	1.0002E+00
GAME	9.1904E-01	9.0863E-01	9.0329E-01
U	3.8201E+00	1.0100E+00	9.3842E-01

SPECIES	MOLE FRACTIONS		
E-	1.2350E-41	4.9500E-26	3.2966E-22
O	2.1321E-12	5.4969E-09	2.1595E-07
O+	4.8856E-34	1.7967E-29	2.6959E-27
O++	0.	0.	0.
O-	3.5159E-47	5.2592E-30	9.4044E-26
O2	4.3991E-04	4.4584E-04	6.5225E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0007E-42	2.2251E-27	1.5465E-23
C	1.6481E-43	4.2693E-29	6.8329E-26
C+	2.1977E-54	4.1192E-41	2.6475E-38
C++	0.	0.	9.1982E-92
C-	7.8411E-80	4.5802E-51	1.3544E-44
CO	3.7215E-09	1.1862E-05	4.2506E-04
CO+	3.2335E-32	1.2227E-26	1.1578E-24
CO2	9.9956E-01	9.9954E-01	9.9892E-01
C2	1.7885E-63	4.8417E-42	1.5771E-37

P1 = 1.00E+03 N/SQ-M, US1= 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1025E+01	2.8730E+02	4.1437E+02
T	4.6611E+00	6.8460E+00	7.5763E+00
RHO	8.8018E+00	4.1673E+01	5.3727E+01
H	8.5508E-01	7.4485E-01	6.9459E-01
A	2.0566E+00	2.4635E+00	2.5901E+00
S	1.1707E+00	1.2041E+00	1.2269E+00
Z	1.0000E+00	1.0070E+00	1.0178E+00
GAME	9.0740E-01	8.8031E-01	8.6996E-01
U	4.2491E+00	1.1100E+00	1.0258E+00

SPECIES	MOLE FRACTIONS		
E-	1.5844E-24	9.1749E-16	3.3688E-14
O	2.6669E-08	5.0804E-05	2.7674E-04
O+	6.1290E-29	4.4892E-22	8.2096E-20
O++	0.	3.4281E-91	2.7518E-80
O-	1.3476E-28	2.9035E-18	2.8077E-16
O2	4.7171E-04	7.3694E-03	1.7665E-02
O2+	1.7596E-18	1.0001E-15	3.8435E-14
O2-	2.3815E-26	7.8025E-17	4.4706E-15
C	6.4449E-28	3.7403E-19	5.0653E-17
C+	3.8416E-40	2.9045E-30	2.5849E-27
C++	8.0553E-96	3.5629E-74	1.6656E-64
C-	9.5554E-49	6.2594E-33	8.7689E-30
CO	6.3632E-05	1.3916E-02	3.4742E-02
CO+	1.8621E-26	5.3284E-20	5.9243E-18
CO2	9.9946E-01	9.7866E-01	9.4732E-01
C2	1.8098E-40	2.1584E-28	1.6196E-25

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2116E+01	4.0381E+02	5.6135E+02
T	5.4931E+00	7.8301E+00	8.4555E+00
PHO	9.4798E+00	5.0332E+01	6.3593E+01
H	8.1625E-01	6.7285E-01	6.1559E-01
A	2.2226E+00	2.6365E+00	2.7589E+00
S	1.2016E+00	1.2421E+00	1.2665E+00
Z	1.0007E+00	1.0246E+00	1.0440E+00
GAME	8.9863E-01	8.6642E-01	8.6226E-01
U	5.9588E+00	1.1242E+00	1.0413E+00

SPECIES	MOLE FRACTIONS		
E-	5.3432E-20	1.1657E-13	1.2419E-12
O	1.2622E-06	5.0706E-04	1.4836E-03
O+	1.4601E-26	5.8136E-19	1.9344E-17
O++	0.	2.5755E-78	2.7572E-73
O-	1.3122E-23	1.3129E-15	2.7188E-14
O2	1.1864E-03	2.3954E-02	4.1043E-02
O2+	1.8127E-18	1.3297E-13	1.5035E-12
O2-	9.2245E-22	1.6115E-14	2.3916E-12
C	2.9740E-24	2.8980E-16	7.6027E-15
C+	5.8658E-37	5.7618E-26	6.9700E-24
C++	1.2060E-51	7.4190E-64	1.4684E-59
C-	1.2636E-41	2.8093E-28	5.2150E-26
CO	1.4948E-03	4.7556E-02	8.2728E-02
CO+	4.2453E-24	3.1059E-17	7.2103E-16
CO2	9.9732E-01	9.2798E-01	8.7475E-01
C2	1.2903E-35	2.2635E-24	2.1743E-22

P1 = 1.00E+03 N/SQ-M, US1 = 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8603E+01	7.3593E+02	9.6873E+02
T	7.0341E+00	9.3568E+00	9.9296E+00
RHO	1.1013E+01	7.1636E+01	8.6611E+01
H	7.2472E-01	5.0074E-01	4.2850E-01
A	2.4907E+00	2.9732E+00	3.1052E+00
S	1.2617E+00	1.3220E+00	1.3499E+00
Z	1.0146E+00	1.0932E+00	1.1264E+00
GAME	8.6928E-01	8.6053E-01	8.6214E-01
U	7.4017E+00	1.1400E+00	1.0776E+00

SPECIES	MOLE FRACTIONS		
E-	6.9712E-15	2.6601E-11	1.0327E-10
O	2.0483E-04	6.0937E-03	1.0806E-02
O+	9.7747E-21	1.9787E-15	1.5731E-14
O++	2.1397E-86	9.4558E-65	2.2218E-61
O-	1.9320E-17	1.2353E-12	7.0203E-12
O2	1.4590E-02	7.9581E-02	1.0176E-01
O2+	7.2527E-15	3.4039E-11	1.3858E-10
O2-	2.6203E-16	6.2473E-12	2.8573E-11
C	4.6098E-18	5.2135E-13	3.5356E-12
C+	1.5111E-28	4.2700E-21	7.6165E-20
C++	3.2206E-70	1.0023E-52	6.1718E-50
C-	1.7447E-31	4.7638E-23	1.0591E-21
CO	2.8518E-02	1.6445E-01	2.1355E-01
CO+	5.8686E-19	4.2260E-14	2.6985E-13
CO2	9.5669E-01	7.4988E-01	6.7388E-01
C2	3.7076E-27	7.9191E-20	1.1997E-18

P1 = 1.00E+03 N/SQ-M, US1 = 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4609E+01	5.4998E+02	7.4150E+02
T	6.3132E+00	8.6581E+00	9.2183E+00
RHO	1.0188E+01	6.0267E+01	7.4436E+01
H	7.7282E-01	5.9166E-01	5.2723E-01
A	2.3673E+00	2.8031E+00	2.9279E+00
S	1.2317E+00	1.2813E+00	1.3074E+00
Z	1.0046E+00	1.0540E+00	1.0806E+00
GAME	8.8366E-01	8.6100E-01	8.6059E-01
U	6.6736E+00	1.1303E+00	1.0570E+00

SPECIES	MOLE FRACTIONS		
E-	4.7358E-17	2.7097E-12	1.4158E-11
O	2.4374E-05	2.1863E-03	4.6181E-03
O+	1.7468E-23	6.1906E-17	8.5886E-16
O++	1.3577E-93	2.1990E-71	2.0060E-66
O-	4.3926E-21	6.9173E-14	6.3687E-13
O2	4.9714E-03	4.9443E-02	7.0336E-02
O2+	5.0061E-17	3.2905E-12	1.9373E-11
O2-	5.5588E-19	5.1370E-13	3.6001E-12
C	6.4074E-21	2.1718E-14	2.4588E-13
C+	1.4907E-31	3.3642E-23	1.2745E-21
C++	3.7044E-76	5.3112E-58	5.1006E-54
C-	1.1587E-34	2.6664E-25	1.4984E-23
CO	9.0914E-03	1.0024E-01	1.4448E-01
CO+	5.3521E-22	1.9747E-15	2.0503E-14
CO2	9.8591E-01	8.4813E-01	7.8057E-01
C2	4.3526E-30	8.9357E-22	2.9022E-20

P1 = 1.00E+03 N/SQ-M, US1 = 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4065E+01	9.6701E+02	1.2503E+03
T	7.6381E+00	1.0091E+01	1.0625E+01
RHO	1.1938E+01	8.4003E+01	9.9697E+01
H	6.7199E-01	4.0036E-01	3.1933E-01
A	2.6040E+00	3.1514E+00	3.2948E+00
S	1.2920E+00	1.3642E+00	1.3940E+00
Z	1.0315E+00	1.1408E+00	1.1804E+00
GAME	8.6067E-01	8.6270E-01	8.6561E-01
U	8.1367E+00	1.1584E+00	1.1065E+00

SPECIES	MOLE FRACTIONS		
E-	1.3343E-13	1.5639E-10	5.0758E-10
O	8.4829E-04	1.3302E-02	2.1331E-02
O+	7.0002E-19	2.7370E-14	1.8114E-13
O++	5.2211E-80	9.7203E-60	2.7319E-57
O-	7.6309E-16	1.1258E-11	5.0732E-11
O2	3.0095E-02	1.1054E-01	1.3184E-01
O2+	1.4068E-13	2.0981E-10	7.0998E-10
O2-	6.5165E-15	4.2642E-11	1.5419E-10
C	2.4564E-16	5.9506E-12	2.2942E-11
C+	4.6717E-26	1.3401E-19	2.2338E-18
C++	6.2788E-65	8.9437E-49	1.3480E-46
C-	8.2807E-29	1.8725E-21	3.6884E-20
CO	6.0185E-02	2.3360E-01	2.8426E-01
CO+	2.6384E-17	4.4872E-13	2.3475E-12
CO2	9.0887E-01	6.4256E-01	5.6257E-01
C2	8.1185E-25	2.1598E-18	2.7163E-17

TABLE I. - Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1097E+02	1.2447E+03	1.5886E+03
T	8.1551E+00	1.0770E+01	1.1327E+01
RHO	1.2903E+01	9.6652E+01	1.1293E+02
M	6.1465E-01	2.9071E-01	1.9973E-01
A	2.7142E+00	3.3406E+00	3.4993E+00
S	1.3231E+00	1.4077E+00	1.4396E+00
Z	1.0545E+00	1.1958E+00	1.2419E+00
GAME	8.5670E-01	8.6649E-01	8.7048E-01
U	8.8748E+00	1.1868E+00	1.1447E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1588E-12	7.0438E-10	2.0313E-09
O	2.3486E-03	2.5027E-02	3.7709E-02
O+	1.6781E-17	2.8247E-13	1.5748E-12
O++	8.9863E-75	7.6108E-56	1.1377E-53
O-	1.1341E-14	7.3259E-11	2.7809E-10
O2	4.9707E-02	1.3908E-01	1.5743E-01
O2+	1.2377E-12	9.8230E-10	2.9307E-09
O2-	6.7995E-14	2.0845E-10	6.3859E-10
C	4.6375E-15	4.9851E-11	2.3492E-10
C+	3.5815E-24	3.5299E-18	4.5550E-17
C++	1.1923E-60	1.3638E-45	1.2949E-43
C-	8.7879E-27	5.8742E-20	8.4192E-19
CO	1.0093E-01	3.0245E-01	3.5187E-01
CO+	4.3988E-16	3.5102E-12	1.5723E-11
CO2	8.4702E-01	5.3345E-01	4.5299E-01
C2	4.6375E-23	4.3537E-17	4.2704E-16

P1 = 1.00E+03 N/SQ-M, US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4896E+02	1.9362E+03	2.4340E+03
T	9.0350E+00	1.2157E+01	1.2821E+01
RHO	1.4777E+01	1.2019E+02	1.3698E+02
M	4.8623E-01	4.4499E-02	-7.0927E-02
A	2.9371E+00	3.7600E+00	3.9629E+00
S	1.3881E+00	1.4983E+00	1.5349E+00
Z	1.1152E+00	1.3251E+00	1.3860E+00
GAME	8.5579E-01	8.7757E-01	8.8380E-01
U	1.0349E+01	1.2744E+00	1.2532E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4702E-11	8.6066E-09	2.2342E-08
O	9.5546E-03	6.7628E-02	9.5014E-02
O+	1.5676E-15	1.5157E-11	7.2339E-11
O++	5.4680E-67	5.4294E-51	4.6653E-47
O-	5.0666E-13	1.5268E-09	4.8099E-09
O2	9.4143E-02	1.7807E-01	1.8379E-01
O2+	2.6981E-11	1.2496E-08	3.2850E-08
O2-	1.7986E-12	2.4501E-09	6.2117E-09
C	3.0304E-13	1.8121E-09	7.4541E-09
C+	1.7848E-21	1.0565E-15	1.0385E-14
C++	2.2228E-54	7.0065E-41	3.9200E-38
C-	6.6152E-24	2.0048E-17	1.9954E-16
CO	1.9709E-01	4.2310E-01	4.6196E-01
CO+	2.4275E-14	1.1260E-10	4.4140E-10
CO2	6.9929E-01	3.3120E-01	2.5924E-01
C2	1.4724E-20	7.1337E-15	5.4676E-14

P1 = 1.00E+03 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2927E+02	1.5683E+03	1.9838E+03
T	8.6153E+00	1.1454E+01	1.2055E+01
RHO	1.3860E+01	1.0889E+02	1.2556E+02
M	5.5273E-01	1.7204E-01	6.9468E-02
A	2.8246E+00	3.5428E+00	3.7215E+00
S	1.3551E+00	1.4525E+00	1.4868E+00
Z	1.0826E+00	1.2574E+00	1.3107E+00
GAME	8.5545E-01	8.7150E-01	8.7658E-01
U	9.6128E+00	1.2254E+00	1.1959E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2614E-12	2.6491E-09	7.0919E-09
O	5.1123E-03	4.2641E-02	6.1724E-02
O+	2.0637E-16	2.3555E-12	1.1418E-11
O++	2.2022E-70	3.8972E-53	2.8991E-50
O-	9.2902E-14	3.7200E-10	1.2523E-09
O2	7.1564E-02	1.6242E-01	1.7565E-01
O2+	6.7675E-12	3.7921E-09	1.0412E-08
O2-	4.1744E-13	7.9547E-10	2.1675E-09
C	4.6702E-14	3.3559E-10	1.4087E-09
C+	1.1401E-22	7.8098E-17	7.4620E-16
C++	4.2598E-57	3.6562E-43	8.4714E-41
C-	3.5645E-25	1.4138E-18	1.4482E-17
CO	1.4743E-01	3.6678E-01	4.1235E-01
CO+	4.0153E-15	2.2065E-11	8.8790E-11
CO2	7.7590E-01	4.2816E-01	3.5028E-01
C2	1.1415E-21	6.7665E-16	5.2816E-15

P1 = 1.00E+03 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7002E+02	2.3455E+03	2.9383E+03
T	9.4408E+00	1.2894E+01	1.3642E+01
RHO	1.5635E+01	1.3006E+02	1.4675E+02
M	4.1515E-01	-9.1751E-02	-2.2199E-01
A	3.0531E+00	3.9541E+00	4.2265E+00
S	1.4222E+00	1.5448E+00	1.5839E+00
Z	1.1519E+00	1.3986E+00	1.4677E+00
GAME	8.5714E-01	8.8464E-01	8.9216E-01
U	1.1082E+01	1.3342E+00	1.3223E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.9247E-11	2.5538E-08	6.4856E-08
O	1.6120E-02	1.0137E-01	1.3895E-01
O+	8.5263E-15	8.8261E-11	4.0472E-10
O++	3.9113E-63	4.6626E-47	8.3551E-45
O-	2.1142E-12	5.4315E-09	1.6132E-08
O2	1.1615E-01	1.8393E-01	1.8000E-01
O2+	8.7367E-11	3.7016E-08	9.3927E-08
O2-	6.1247E-12	6.6540E-09	1.5735E-08
C	1.4648E-12	8.8607E-09	3.5524E-08
C+	1.5006E-20	1.3305E-14	1.1917E-13
C++	2.4412E-51	4.5817E-38	5.0205E-36
C-	6.3548E-23	2.4685E-16	2.1857E-15
CO	2.4769E-01	4.6860E-01	4.9836E-01
CO+	1.1083E-13	5.1889E-10	1.9920E-09
CO2	6.2009E-01	2.4610E-01	1.8269E-01
C2	1.1721E-19	6.6548E-14	4.7799E-13

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 3.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9243E+02	2.7921E+03	3.4938E+C3
T	9.8308E+00	1.3675E+01	1.4536E+01
PHO	1.6416E+01	1.3821E+02	1.5453E+02
H	3.3951E-01	-2.3672E-01	-3.8393E-01
A	3.1736E+00	4.2647E+00	4.9155E+00
S	1.4971E+00	1.5918E+00	1.6336E+00
Z	1.1924E+00	1.4773E+00	1.5754E+00
GAME	8.5919E-01	8.9269E-01	9.0183E-01
U	1.1814E+01	1.4052E+00	1.4042E+00

SPECIES	MOLE FRACTIONS		
F-	2.2544E-10	6.9867E-08	1.7793E-07
O	2.5301E-02	1.4466E-01	1.9353E-01
O+	4.2315E-14	4.5476E-10	2.1768E-09
O++	5.2978E-60	1.2077E-44	1.5561E-41
O-	7.6250E-12	1.6916E-08	4.8332E-08
O2	1.3643E-01	1.7871E-01	1.6385E-01
O2+	2.5043E-10	9.5544E-08	2.4817E-07
O2-	1.7848E-11	1.5386E-08	3.2718E-08
C	6.3029E-12	3.9080E-08	1.6499E-07
C+	1.3390E-19	1.3919E-13	1.4217E-12
C++	8.8440E-49	6.8410E-36	2.0030E-33
C-	6.4359E-22	2.4252E-15	2.2705E-14
CO	2.9742E-01	5.0149E-01	5.2067E-01
CO+	4.4871E-13	2.1697E-09	8.6219E-09
CO2	5.4089E-01	1.7914E-01	1.2195E-01
C2	8.8723E-19	5.2651E-13	4.0980E-12

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 3.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4127E+02	3.7787E+03	4.7472E+C3
T	1.0602E+01	1.5431E+01	1.6677E+01
PHO	1.7722E+01	1.4878E+02	1.6315E+02
H	1.7452E-01	-5.5269E-01	-7.4194E-01
A	3.4314E+00	4.8176E+00	5.1972E+00
S	1.5297E+00	1.6863E+00	1.7336E+00
Z	1.2840E+00	1.6482E+00	1.7453E+00
GAME	8.6491E-01	9.1257E-01	9.2827E-01
U	1.3267E+01	1.5847E+00	1.6139E+00

SPECIES	MOLE FRACTIONS		
E-	1.3821E-09	4.4151E-07	1.2043E-06
O	5.3672E-02	2.5674E-01	3.2540E-01
O+	7.6549E-13	1.0260E-08	5.8049E-08
O++	5.8389E-57	9.3999E-39	1.1516E-35
O-	6.8108E-11	1.1785E-07	3.1988E-07
O2	1.6784E-01	1.3680E-01	1.0189E-01
O2+	1.5497E-09	5.7003E-07	1.4002E-06
O2-	1.0462E-10	5.4223E-08	9.5189E-08
C	8.4323E-11	6.8690E-07	3.6547E-06
C+	9.6743E-18	1.4726E-11	2.2304E-10
C++	6.7111E-46	4.672E-31	2.1246E-28
C-	4.9259E-20	1.8045E-13	2.1215E-12
CO	3.8872E-01	5.2981E-01	5.2867E-01
CO+	5.3849E-12	3.3271E-08	1.6086E-07
CO2	3.8975E-01	7.6652E-02	4.4043E-02
C2	3.5847E-17	2.9245E-11	3.1998E-10

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 3.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1618E+02	3.2714E+03	4.0974E+C3
T	1.0216E+01	1.4514E+01	1.5527E+01
PHO	1.7112E+01	1.4441E+02	1.6008E+02
H	2.5930E-01	-3.9018E-01	-5.5705E-01
A	3.2995E+00	4.5199E+00	4.8351E+00
S	1.4930E+00	1.6391E+00	1.6835E+00
Z	1.2367E+00	1.5607E+00	1.6485E+00
GAME	8.6180E-01	9.0184E-01	9.1335E-01
U	1.2542E+01	1.4882E+00	1.5003E+00

SPECIES	MOLE FRACTIONS		
E-	5.8725E-10	1.8002E-07	4.6614E-07
O	3.7631E-02	1.9709E-01	2.5692E-01
O+	2.0129E-13	2.2176E-09	1.1231E-08
O++	4.4319E-59	1.6798E-41	1.5220E-38
O-	2.4484E-11	4.7064E-08	1.2993E-07
O2	1.5398E-01	1.6247E-01	1.3675E-01
O2+	6.5566E-10	2.4718E-07	6.0826E-07
O2-	4.5811E-11	3.0948E-08	6.0196E-08
C	2.5170E-11	1.6604E-07	7.5378E-07
C+	1.5084E-18	1.4498E-12	1.7046E-11
C++	8.5778E-48	2.1210E-33	6.6922E-31
C-	7.4450E-21	2.1896E-14	2.1903E-13
CO	3.4488E-01	5.2147E-01	5.2988E-01
CO+	1.6874E-12	8.6261E-09	3.6654E-08
CO2	4.6351E-01	1.1897E-01	7.6447E-02
C2	6.7761E-18	3.9854E-12	3.4779E-11

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 4.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6767E+02	4.3067E+03	5.4431E+C3
T	1.0994E+01	1.6465E+01	1.8113E+01
PHO	1.8240E+01	1.5090E+02	1.6313E+02
H	8.5175E-02	-7.2230E-01	-9.4066E-01
A	3.5701E+00	5.1478E+00	5.6319E+00
S	1.5672E+00	1.7331E+00	1.7835E+00
Z	1.3349E+00	1.7380E+00	1.8421E+00
GAME	8.6847E-01	9.2607E-01	9.5061E-01
U	1.3989E+01	1.6976E+00	1.7607E+00

SPECIES	MOLE FRACTIONS		
E-	3.0581E-09	1.0579E-06	3.3427E-06
O	7.4013E-02	3.2023E-01	3.9364E-01
O+	2.6201E-12	4.6781E-08	3.3437E-07
O++	3.4792E-54	4.3895E-36	1.7295E-32
O-	1.7329E-10	2.7028E-07	7.6042E-07
O2	1.7717E-01	1.0464E-01	6.3726E-02
O2+	3.4318E-09	1.2338E-06	3.0743E-06
O2-	2.1892E-10	8.2666E-08	1.2891E-07
C	2.5840E-10	2.9335E-06	2.1682E-05
C+	5.0097E-17	1.5763E-10	4.0625E-09
C++	4.2249E-44	9.4456E-29	1.3781E-25
C-	2.6464E-19	1.4563E-12	2.5627E-11
CO	4.2770E-01	5.2900E-01	5.2058E-01
CO+	1.5873E-11	1.3009E-07	8.1927E-07
CO2	3.2112E-01	4.6129E-02	2.2023E-02
C2	1.6236E-16	2.2497E-10	4.0261E-09

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9540E+02	4.8463E+03	6.1862E+03
T	1.1396E+01	1.7709E+01	2.0203E+01
RHO	1.8663E+01	1.4989E+02	1.5885E+02
M	-8.7318E-03	-9.0057E-01	-1.1557E+00
A	3.7161E+00	5.5285E+00	6.1998E+00
S	1.6053E+00	1.7792E+00	1.8326E+00
Z	1.3889E+00	1.8267E+00	1.9276E+00
GAME	8.7246E-01	9.4509E-01	9.8701E-01
U	1.4708E+01	1.8341E+00	1.9564E+00

SPECIES	MOLE FRACTIONS		
E-	6.4975E-09	2.6203E-06	1.2283E-05
O	9.9164E-02	3.8291E-01	4.5212E-01
O+	8.8521E-12	2.2555E-07	2.4349E-06
O++	1.0334E-51	2.9076E-33	9.2483E-29
D-	4.1472E-10	5.8808E-07	1.9950E-06
O2	1.8117E-01	6.9889E-02	2.9302E-02
O2+	7.2825E-09	2.5330E-06	6.2051E-06
O2-	4.2453E-10	1.0947E-07	1.5281E-07
C	7.7236E-10	1.4262E-05	2.0794E-04
C+	2.7565E-16	2.0901E-09	1.4569E-07
C++	5.7363E-42	2.5633E-26	3.3979E-22
C-	1.4388E-18	1.3299E-11	5.8930E-10
CO	4.6086E-01	5.2217E-01	5.0986E-01
CO+	4.5447E-11	5.5714E-07	5.6458E-06
CO2	2.5881E-01	2.5016E-02	8.4791E-03
C2	7.3342E-16	2.1193E-09	1.0386E-07

P1 = 1.00E+03 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5472E+02	5.9060E+03	7.7662E+03
T	1.2247E+01	2.1715E+01	2.5915E+01
RHO	1.9230E+01	1.3848E+02	1.4786E+02
M	-2.1022E-01	-1.2795E+00	-1.6265E+00
A	4.0350E+00	6.5434E+00	7.0048E+00
S	1.6825E+00	1.8656E+00	1.9210E+00
Z	1.4063E+00	1.5641E+00	2.0267E+00
GAME	8.8174E-01	1.0039E+00	9.3422E-01
U	1.6136E+01	2.2433E+00	2.4119E+00

SPECIES	MOLE FRACTIONS		
E-	2.6256E-08	3.1262E-05	2.7655E-04
O	1.6490E-01	4.7586E-01	5.0181E-01
O+	9.4601E-11	7.7215E-06	5.5275E-05
O++	1.3573E-48	1.4776E-26	3.5474E-22
D-	1.9773E-09	3.4880E-06	1.7736E-05
O2	1.7151E-01	1.5174E-02	4.7074E-03
O2+	2.9116E-08	7.7495E-06	1.0015E-05
O2-	1.2831E-09	1.4192E-07	2.5326E-07
C	6.4308E-09	9.5410E-04	1.8567E-02
C+	9.330E-15	1.4568E-06	9.5344E-05
C++	4.4356E-39	4.1530E-20	4.1343E-16
C-	3.9124E-17	4.5577E-09	4.4949E-07
CO	5.0734E-01	5.0386E-01	4.7314E-01
CO+	3.4603E-10	1.7969E-05	1.3435E-04
CO2	1.5625E-01	4.0856E-03	1.1123E-03
C2	1.4332E-14	8.9299E-07	6.9951E-05

P1 = 1.00E+03 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2442E+02	5.3846E+03	6.9791E+03
T	1.1812E+01	1.9349E+01	2.3333E+01
RHO	1.8991E+01	1.4596E+02	1.5086E+02
M	-1.0720E-01	-1.0865E+00	-1.3899E+00
A	3.8702E+00	5.9963E+00	6.7702E+00
S	1.6439E+00	1.8237E+00	1.8796E+00
Z	1.4461E+00	1.9067E+00	1.9826E+00
GAME	8.7487E-01	9.7464E-01	9.9081E-01
U	1.5424E+01	2.0093E+00	2.2178E+00

SPECIES	MOLE FRACTIONS		
E-	1.3338E-08	7.5855E-06	7.3217E-05
O	1.2944E-01	4.3809E-01	4.8609E-01
O+	3.0004E-11	1.2472E-06	1.8310E-05
O++	1.1350E-50	4.0446E-30	1.1854E-24
D-	9.3557E-10	1.3142E-06	6.8339E-06
O2	1.7936E-01	3.7658E-02	9.6400E-03
O2+	1.4880E-08	4.8558E-06	9.2911E-06
O2-	7.6459E-10	1.2738E-07	1.8617E-07
C	2.2871E-09	9.3332E-05	3.2918E-03
C+	1.7524E-15	4.2313E-08	8.6348E-06
C++	8.3246E-41	2.0895E-23	2.2019E-18
C-	8.1407E-18	1.7574E-10	3.0771E-08
CO	4.8754E-01	5.1276E-01	4.9832E-01
CO+	1.2853E-10	2.8819E-06	4.4042E-05
CO2	2.0367E-01	1.1384E-02	2.4952E-03
C2	3.4200E-15	3.1140E-08	5.6750E-06

P1 = 1.00E+03 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8632E+02	6.4238E+03	8.5285E+03
T	1.2703E+01	2.4382E+01	2.7520E+01
RHO	1.9378E+01	1.3169E+02	1.4892E+02
M	-3.1780E-01	-1.4802E+00	-1.8622E+00
A	4.2055E+00	6.8555E+00	7.2322E+00
S	1.7222E+00	1.9042E+00	1.9593E+00
Z	1.5653E+00	2.0006E+00	2.0810E+00
GAME	8.8716E-01	9.6359E-01	9.1330E-01
U	1.6945E+01	2.4821E+00	2.5249E+00

SPECIES	MOLE FRACTIONS		
E-	5.0264E-08	1.3740E-04	5.7681E-04
O	2.0521E-01	4.9394E-01	5.1578E-01
O+	2.8874E-10	3.1702E-05	9.4217E-05
O++	1.1259E-46	1.5966E-23	6.5143E-21
D-	3.4519E-09	9.6444E-06	3.1432E-05
O2	1.5786E-01	6.2470E-03	3.4147E-03
O2+	5.4021E-08	9.0830E-06	1.0410E-05
O2-	2.0077E-09	1.7506E-07	3.3537E-07
C	1.7705E-08	7.9099E-03	4.1999E-02
C+	4.8123E-14	2.9771E-05	2.8870E-04
C++	1.8546E-37	2.7593E-17	5.3104E-15
C-	1.76C6E-16	1.0411E-07	1.7786E-06
CO	5.2076E-01	4.9003E-01	4.3664E-01
CO+	9.1377E-10	7.6773E-05	2.1697E-04
CO2	1.1657E-01	1.5593E-03	7.2248E-04
C2	5.8082E-14	1.9185E-05	2.2407E-04

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+03 \text{ N/SQ-M, } U_1 = 5.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1917E+02	6.9724E+03	9.2696E+03
T	1.3190E+01	2.6276E+01	2.8714E+01
RHO	1.9437E+01	1.2585E+02	1.5071E+02
H	-4.2993E-01	-1.6907E+00	-2.1016E+00
A	4.3892E+00	7.0434E+00	7.4686E+00
S	1.7615E+00	1.9407E+00	1.9966E+00
Z	1.4349E+00	2.0435E+00	2.1420E+00
GAME	8.9335E-01	9.2390E-01	9.0693E-01
U	1.7549E+01	2.6313E+00	2.4982E+00

 $P_1 = 1.00\text{E}+03 \text{ N/SQ-M, } U_1 = 5.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5325E+02	7.5324E+03	9.9905E+03
T	1.3720E+01	2.7400E+01	2.9729E+01
RHO	1.9402E+01	1.3018E+02	1.5220E+02
H	-5.4660E-01	-1.9102E+00	-2.3488E+00
A	4.5873E+00	7.2561E+00	7.7096E+00
S	1.8015E+00	1.9767E+00	2.0341E+00
Z	1.7026E+00	2.0465E+00	2.2079E+00
GAME	9.0077E-01	9.0992E-01	9.0552E-01
U	1.8250E+01	2.7248E+00	2.6660E+00

SPECIES	MOLE FRACTIONS		
E-	9.3914E-08	3.5777E-04	9.3954E-04
O	2.4955E-01	5.0664E-01	5.2979E-01
O+	8.7378E-10	6.5777E-05	1.3482E-04
O++	8.3454E-45	7.7124E-22	4.5566E-20
O-	7.5121E-09	1.9469E-05	4.6963E-05
O2	1.3907E-01	3.8579E-03	2.8581E-03
O2+	1.0105E-07	9.3424E-06	1.0984E-05
O2-	2.9240E-09	2.2862E-07	4.2429E-07
C	4.8873E-08	2.5438E-02	6.7749E-02
C+	2.5220E-13	1.4638E-04	5.6059E-04
C++	7.4954E-36	9.3212E-16	2.6967E-14
C-	7.7347E-16	6.7177E-07	4.2134E-06
CO	5.2716E-01	4.6231E-01	3.9665E-01
CO+	2.4234E-09	1.5663E-04	2.8475E-04
CO2	8.4214E-02	8.8149E-04	5.3329E-04
C2	2.3726E-13	1.0328E-04	4.2390E-04

SPECIES	MOLE FRACTIONS		
E-	1.7327E-07	6.5350E-04	1.3665E-03
O	2.9673E-01	5.1968E-01	5.4380E-01
O+	2.6838E-09	1.0107E-04	1.8030E-04
O++	7.4846E-43	8.1490E-21	2.1275E-19
O-	1.3658E-08	3.1264E-05	6.4495E-05
O2	1.1621E-01	2.9961E-03	2.5311E-03
O2+	1.8161E-07	9.6482E-06	1.1728E-05
O2-	3.9506E-09	2.9119E-07	5.1852E-07
C	1.3902E-07	4.8368E-02	9.4174E-02
CO	1.4193E-12	3.5019E-04	9.0475E-04
CO+	3.6939E-34	7.1801E-15	9.2973E-14
CO-	3.4419E-15	2.0235E-06	7.8942E-06
CO2	5.2863E-01	4.2671E-01	3.5534E-01
C2	6.5811E-09	2.2617E-04	3.4265E-04
	5.8434E-02	6.1433E-04	4.1168E-04
	1.0208E-12	2.5583E-04	6.6989E-04

 $P_1 = 1.00\text{E}+03 \text{ N/SQ-M, } U_1 = 5.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8852E+02	8.0763E+03	1.0673E+04
T	1.4317E+01	2.8654E+01	3.0650E+01
RHO	1.9260E+01	1.3075E+02	1.5288E+02
H	-6.6779E-01	-2.1379E+00	-2.6039E+00
A	4.8054E+00	7.4780E+00	7.9546E+00
S	1.8411E+00	2.0128E+00	2.0720E+00
Z	1.7716E+00	2.1557E+00	2.2776E+00
GAME	9.1041E-01	9.0532E-01	9.0640E-01
U	1.8944E+01	2.7955E+00	2.7303E+00

SPECIES	MOLE FRACTIONS		
E-	3.2108E-07	1.0086E-03	1.8645E-03
O	3.4520E-01	5.3301E-01	5.5755E-01
O+	8.6174E-09	1.3882E-04	2.3336E-04
O++	8.1852E-41	4.4960E-20	8.0004E-19
O-	2.3971E-08	4.4617E-05	8.4017E-05
O2	9.0580E-02	2.5598E-03	2.3006E-03
O2+	3.2236E-07	1.0115E-05	1.2600E-05
O2-	4.9236E-09	3.5809E-07	6.1490E-07
C	4.2342E-07	7.3187E-02	1.2042E-01
C+	9.0636E-12	6.2420E-04	1.3233E-03
C++	2.3037E-32	2.9739E-14	2.6088E-13
C-	1.6191E-14	4.2963E-06	1.2906E-05
CO	5.2586E-01	3.8821E-01	3.1457E-01
CO+	1.8981E-08	2.8471E-04	3.9277E-04
CO2	3.8352E-02	4.6475E-04	3.2241E-04
C2	4.8863E-12	4.4936E-04	9.0667E-04

 $P_1 = 1.00\text{E}+03 \text{ N/SQ-M, } U_1 = 5.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2488E+02	8.5741E+03	1.1286E+04
T	1.5026E+01	2.9564E+01	3.1520E+01
RHO	1.8983E+01	1.3068E+02	1.5234E+02
H	-7.9348E-01	-2.3730E+00	-2.8665E+00
A	5.0554E+00	7.7032E+00	8.2047E+00
S	1.8802E+00	2.0494E+00	2.1106E+00
Z	1.8401E+00	2.2194E+00	2.3505E+00
GAME	9.2431E-01	9.0438E-01	9.0865E-01
U	1.9630E+01	2.8566E+00	2.7942E+00

SPECIES	MOLE FRACTIONS		
E-	6.1530E-07	1.4223E-03	2.4471E-03
O	3.9298E-01	5.4632E-01	5.7089E-01
O+	2.9891E-08	1.8112E-04	2.9695E-04
O++	2.3033E-39	1.8340E-19	2.6628E-18
O-	4.1296E-08	5.9355E-05	1.0342E-04
O2	6.3798E-02	2.2801E-03	2.1123E-03
O2+	5.7172E-07	1.0695E-05	1.3564E-05
O2-	5.6015E-09	4.2583E-07	7.0851E-07
C	1.4468E-06	9.8439E-02	1.4607E-01
C+	6.6535E-11	9.6308E-04	1.8261E-03
C++	2.9232E-31	9.1634E-14	6.4997E-13
C-	8.4472E-14	7.5501E-06	1.9287E-05
CO	5.2010E-01	3.4896E-01	2.7442E-01
CO+	6.0522E-08	3.3469E-04	4.3586E-04
CO2	2.3117E-02	3.6239E-04	2.5177E-04
C2	2.7185E-11	6.5859E-04	1.1232E-03

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 5.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6216E+02	8.9759E+03	1.1767E+04
T	1.5950E+01	3.0383E+01	3.2353E+01
RHO	1.8506E+01	1.2922E+02	1.4996E+02
H	-9.2359E-01	-2.6141E+00	-3.1353E+00
A	5.3649E+00	7.9299E+00	8.4592E+00
S	1.9186E+00	2.0868E+00	2.1499E+00
Z	1.9045E+00	2.2863E+00	2.4255E+00
GAME	9.4748E-01	9.0528E-01	9.1191E-01
U	2.0302E+01	2.9125E+00	2.8565E+00

SPECIES	MOLE FRACTIONS		
E-	1.3247E-06	1.8994E-03	3.1302E-03
O	4.3702E-01	5.5937E-01	5.8361E-01
O+	1.2893E-07	2.2970E-04	3.7414E-04
O++	4.6578E-36	6.0529E-19	8.1321E-18
O-	7.3016E-08	7.5112E-05	1.2812E-04
O2	3.8130E-02	2.0685E-03	1.9391E-03
O2+	1.0271E-06	1.1324E-05	1.4559E-05
O2-	5.7349E-09	4.8887E-07	7.9031E-07
C	6.7057E-06	1.2343E-01	1.7069E-01
C+	8.7229E-10	1.3687E-03	2.4260E-03
C++	4.6050E-28	2.3439E-13	1.4941E-12
C-	6.4960E-13	1.1767E-05	2.6925E-05
CO	5.1280E-01	3.1000E-01	2.3570E-01
CO+	2.4650E-07	3.7497E-04	4.7134E-04
CO2	1.2038E-02	2.8490E-04	1.9385E-04
C2	2.4733E-10	8.6147E-04	1.2996E-03

P1 = 1.00E+03 N/SQ-M, US1 = 6.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3805E+02	9.1911E+03	1.1957E+04
T	1.9335E+01	3.1798E+01	3.3936E+01
RHO	1.6606E+01	1.1913E+02	1.3654E+02
H	-1.1965E+00	-3.1052E+00	-3.6829E+00
A	6.2608E+00	8.3786E+00	8.9821E+00
S	1.9900E+00	2.1650E+00	2.2324E+00
Z	1.9872E+00	2.4263E+00	2.5805E+00
GAME	1.0202E+00	9.0991E-01	9.2128E-01
U	2.1560E+01	3.0102E+00	2.9890E+00

SPECIES	MOLE FRACTIONS		
E-	1.7925E-05	3.0755E-03	4.9239E-03
O	4.9132E-01	5.8395E-01	6.0683E-01
O+	4.8888E-06	3.5134E-04	5.8835E-04
O++	5.0973E-29	4.5923E-18	6.3985E-17
O-	4.1438E-07	1.0616E-04	1.7299E-04
O2	5.6540E-03	1.6980E-03	1.5734E-03
O2+	2.5559E-06	1.2387E-05	1.6288E-05
O2-	5.3733E-09	5.6488E-07	8.6552E-07
C	6.7410E-04	1.7090E-01	2.1618E-01
C+	1.0686E-06	2.4046E-03	4.0240E-03
C++	1.7469E-21	1.1116E-12	6.8054E-12
C-	3.5603E-10	2.2253E-05	4.4653E-05
CO	5.0083E-01	2.3971E-01	1.6356E-01
CO+	9.8315E-06	4.3619E-04	5.1373E-04
CO2	1.4888E-03	1.6985E-04	1.0456E-04
C2	1.9396E-07	1.1670E-03	1.4662E-03

P1 = 1.00E+03 N/SQ-M, US1 = 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.0001E+02	9.1962E+03	1.2013E+04
T	1.7306E+01	3.1124E+01	3.3163E+01
RHO	1.7717E+01	1.2544E+02	1.4472E+02
H	-1.0580E+00	-2.8590E+00	-3.4097E+00
A	5.7847E+00	8.1555E+00	8.7204E+00
S	1.9556E+00	2.1253E+00	2.1907E+00
Z	1.9569E+00	2.3555E+00	2.5030E+00
GAME	9.8810E-01	9.0722E-01	9.1614E-01
U	2.0949E+01	2.9638E+00	2.9293E+00

SPECIES	MOLE FRACTIONS		
E-	3.7995E-06	2.4471E-03	3.9499E-03
O	4.7200E-01	5.7197E-01	5.9573E-01
O+	7.3615E-07	2.8595E-04	4.7011E-04
O++	8.0863E-33	1.7604E-18	2.3424E-17
O-	1.4853E-07	9.1021E-05	1.5124E-04
O2	1.7206E-02	1.8800E-03	1.7604E-03
O2+	1.7976E-06	1.1910E-05	1.5499E-05
O2-	5.3774E-09	5.3765E-07	8.4663E-07
C	5.0654E-05	1.4770E-01	1.9433E-01
C+	2.2092E-08	1.8465E-03	3.1540E-03
C++	4.6586E-25	5.3384E-13	3.2678E-12
C-	9.5711E-12	1.6766E-05	3.5608E-05
CO	5.0587E-01	2.7208E-01	1.9833E-01
CO+	1.3976E-06	4.1104E-04	4.9797E-04
CO2	4.8644E-03	2.2194E-04	1.4479E-04
C2	4.5469E-09	1.0364E-03	1.4191E-03

P1 = 1.00E+03 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7744E+02	9.2752E+03	1.2030E+04
T	2.1436E+01	3.2508E+01	3.4816E+01
RHO	1.5749E+01	1.1418E+02	1.2992E+02
H	-1.3399E+00	-3.3600E+00	-3.9676E+00
A	4.4440E+00	8.6151E+00	9.2704E+00
S	2.0216E+00	2.2044E+00	2.2738E+00
Z	2.0066E+00	2.4990E+00	2.6595E+00
GAME	9.6421E-01	9.1363E-01	9.2816E-01
U	2.2178E+01	3.0640E+00	3.0592E+00

SPECIES	MOLE FRACTIONS		
E-	8.2757E-05	3.8246E-03	6.1672E-03
O	4.9960E-01	5.9534E-01	6.1708E-01
O+	1.8849E-05	4.3350E-04	7.0979E-04
O++	5.1137E-26	1.2072E-17	1.8766E-16
O-	1.1899E-06	1.2327E-04	1.9861E-04
O2	2.1722E-03	1.5422E-03	1.3991E-03
O2+	2.6823E-06	1.3027E-05	1.7342E-05
O2-	6.5131E-09	5.9514E-07	8.8669E-07
C	5.9091E-03	1.9318E-01	2.3669E-01
C+	2.2188E-05	3.0733E-03	5.1293E-03
C++	1.1489E-18	2.2843E-12	1.4820E-11
C-	9.1366E-09	2.8766E-04	5.410E-04
CO	4.9161E-01	2.0059E-01	1.3040E-01
CO+	4.0283E-05	4.7738E-04	5.2454E-04
CO2	9.4434E-04	1.2857E-04	7.2774E-04
C2	4.5553E-06	1.2639E-03	1.4609E-03

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1954E+02	9.6988E+03	1.2565E+04
T	2.2823E+01	3.3354E+01	3.5955E+01
RHO	1.5488E+01	1.1294E+02	1.2748E+02
H	-1.4877E+00	-3.6319E+00	-4.2765E+00
A	6.5310E+00	8.8831E+00	9.6154E+00
S	2.0514E+00	2.2425E+00	2.3142E+00
Z	2.0356E+00	2.5747E+00	2.7413E+00
GAME	9.1812E-01	9.1887E-01	9.3805E-01
U	2.2845E+01	3.1375E+00	3.1533E+00

SPECIES	MOLE FRACTIONS		
E-	2.1519E-04	4.7651E-03	7.8896E-03
O	5.0740E-01	6.0622E-01	6.2638E-01
O+	3.6077E-05	5.4621E-04	1.0019E-03
O++	1.9333E-24	3.5964E-17	6.9758E-16
O-	2.4161E-06	1.4619E-04	2.3495E-04
O2	1.3219E-03	1.4191E-03	1.2432E-03
O2+	2.5555E-06	1.4107E-05	1.9116E-05
O2-	8.4458E-09	6.5129E-07	9.4083E-07
C	1.8773E-02	2.1468E-01	2.5571E-01
C+	1.0190E-04	3.9099E-03	6.4404E-03
C++	3.2232E-17	4.9752E-12	3.6765E-11
C-	5.5138E-08	3.7401E-05	7.0130E-05
CO	4.7173E-01	1.6635E-01	9.8814E-02
CO+	7.7142E-05	4.7902E-04	5.3423E-04
CO2	3.1095E-04	9.6154E-05	4.8035E-05
C2	2.4239E-05	1.3377E-03	1.4092E-03

P1 = 1.00E+03 N/SQ-M, US1= 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0982E+02	1.1024E+04	1.4335E+04
T	2.4481E+01	3.5443E+01	3.9245E+01
RHO	1.5644E+01	1.1392E+02	1.2575E+02
H	-1.7986E+00	-4.2138E+00	-4.9596E+00
A	6.8014E+00	9.5130E+00	1.0518E+01
S	2.1097E+00	2.3171E+00	2.3943E+00
Z	2.1146E+00	2.7303E+00	2.9047E+00
GAME	8.9359E-01	9.3517E-01	9.7045E-01
U	2.4246E+01	3.3345E+00	3.4437E+00

SPECIES	MOLE FRACTIONS		
E-	5.9864E-04	7.5498E-03	1.4300E-02
O	5.2587E-01	6.2536E-01	6.3927E-01
O+	6.7742E-05	9.2843E-04	2.1273E-03
O++	7.7945E-23	4.2911E-16	2.0782E-14
O-	5.5283E-06	2.0929E-04	3.4429E-04
O2	8.6263E-04	1.1834E-03	9.0182E-04
O2+	2.4894E-06	1.7325E-05	2.4957E-05
O2-	1.3063E-08	7.9042E-07	1.0434E-06
C	5.4106E-02	2.5341E-01	2.8482E-01
C+	4.0251E-04	6.3643E-03	1.2078E-02
C++	7.9775E-16	2.7657E-11	3.6353E-10
C-	3.8391E-07	6.1877E-05	1.1343E-04
CO	4.1767E-01	1.0300E-01	4.4392E-02
CO+	1.3182E-04	5.1169E-04	5.2792E-04
CO2	1.7235E-04	4.7830E-05	1.5099E-05
C2	1.0869E-04	1.3469E-03	1.0866E-03

P1 = 1.00E+03 N/SQ-M, US1= 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6385E+02	1.0315E+04	1.3378E+04
T	2.3758E+01	3.4338E+01	3.7406E+01
RHO	1.5512E+01	1.1323E+02	1.2663E+02
H	-1.6408E+00	-3.9177E+00	-4.6091E+00
A	6.6598E+00	9.1844E+00	1.0029E+01
S	2.0806E+00	2.2804E+00	2.3544E+00
Z	2.0727E+00	2.6530E+00	2.8244E+00
GAME	9.0068E-01	9.2596E-01	9.5205E-01
U	2.3540E+01	3.2278E+00	3.2857E+00

SPECIES	MOLE FRACTIONS		
E-	3.9105E-04	5.9810E-03	1.0415E-02
O	5.1635E-01	6.1643E-01	6.3417E-01
O+	5.2069E-05	7.0492E-04	1.4128E-03
O++	1.6686E-23	1.1926E-16	3.3122E-15
O-	3.8785E-06	1.7506E-04	2.8320E-04
O2	1.0157E-03	1.3027E-03	1.0802E-03
O2+	2.4893E-06	1.5560E-05	2.1627E-05
O2-	1.0669E-08	7.2053E-07	1.0020E-06
C	3.5634E-02	2.3514E-01	2.7240E-01
C+	2.3332E-04	4.9866E-03	8.8174E-03
C++	2.1560E-17	1.1480E-11	1.0602E-10
C-	1.7918E-07	4.8480E-05	8.9435E-05
CO	4.4593E-01	1.3228E-01	6.9459E-02
CO+	1.0724E-04	4.9817E-04	5.3724E-04
CO2	2.2116E-04	6.9364E-05	2.8804E-05
C2	6.0531E-05	1.3702E-03	1.2874E-03

P1 = 1.00E+03 N/SQ-M, US1= 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5735E+02	1.1787E+04	1.5397E+04
T	2.5095E+01	3.6743E+01	4.1601E+01
RHO	1.5819E+01	1.1427E+02	1.2424E+02
H	-1.9611E+00	-4.5193E+00	-5.3301E+00
A	6.9473E+00	9.8863E+00	1.1074E+01
S	2.1389E+00	2.3539E+00	2.4398E+00
Z	2.1596E+00	2.8075E+00	2.9790E+00
GAME	8.9056E-01	9.4749E-01	9.8954E-01
U	2.4997E+01	3.4599E+00	3.6390E+00

SPECIES	MOLE FRACTIONS		
E-	8.3515E-04	9.7234E-03	2.0539E-02
O	5.3562E-01	6.3291E-01	6.4014E-01
O+	8.4087E-05	1.2687E-03	3.4515E-03
O++	2.7177E-22	1.8064E-15	1.7672E-13
O-	7.3698E-06	2.5053E-04	4.1954E-04
O2	7.6945E-04	1.0498E-03	7.1448E-04
O2+	2.5351E-06	1.9488E-05	2.9344E-05
O2-	1.5629E-08	8.5201E-07	1.0454E-06
C	7.3207E-02	2.6941E-01	2.9075E-01
C+	6.0385E-04	8.2474E-03	1.7117E-02
C++	2.2166E-15	7.3195E-11	1.5093E-09
C-	6.8432E-07	7.8217E-05	1.4167E-04
CO	3.8841E-01	7.5232E-02	2.5356E-02
CO+	1.5274E-04	5.1738E-04	5.0288E-04
CO2	1.4010E-04	3.0468E-05	6.7152E-06
C2	1.6432E-04	1.2577E-03	8.2961E-04

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.0632E+02	1.2586E+04	1.6540E+04
T	2.5647E+01	3.8303E+01	4.4429E+01
RHO	1.6011E+01	1.1403E+02	1.2225E+02
M	-2.1282E+00	-4.8334E+00	-5.7188E+00
A	7.0958E+00	1.0312E+01	1.1625E+01
S	2.1683E+00	2.3902E+00	2.4725E+00
Z	2.2071E+00	2.8816E+00	3.0452E+00
GAME	8.8950E-01	9.6340E-01	9.9889E-01
U	2.5671E+01	3.6064E+00	3.8644E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1012E-03	1.2855E-02	3.0070E-02
O	5.4541E-01	6.3834E-01	6.3535E-01
O+	1.0181E-04	1.8139E-03	5.8303E-03
O++	7.9815E-22	9.0483E-15	1.7608E-12
O-	9.4182E-06	2.9993E-04	5.0353E-04
O2	7.0568E-04	9.0170E-04	5.4488E-04
O2+	2.6132E-06	2.2148E-05	3.4763E-05
O2-	1.8371E-08	8.9501E-07	1.0036E-06
C	9.2482E-02	2.8193E-01	2.8857E-01
C+	8.3627E-04	1.0905E-02	2.4416E-02
C++	5.2181E-15	2.1642E-10	6.8651E-09
C-	1.0910E-06	9.7685E-05	1.7062E-04
CO	3.5884E-01	9.1202E-02	1.3466E-02
CO+	1.7107E-04	5.1266E-04	4.6489E-04
CO2	1.1641E-04	1.7531E-05	2.6720E-06
C2	2.2399E-04	1.1018E-03	5.8010E-04

P1 = 1.00E+03 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0084E+03	1.4226E+04	1.8984E+04
T	2.6644E+01	4.2467E+01	5.0342E+01
RHO	1.6393E+01	1.1124E+02	1.1918E+02
M	-2.4761E+00	-5.4848E+00	-6.5320E+00
A	7.4005E+00	1.1281E+01	1.2538E+01
S	2.2277E+00	2.4603E+00	2.5454E+00
Z	2.3079E+00	3.0113E+00	3.1641E+00
GAME	8.9033E-01	9.9519E-01	9.8687E-01
U	2.7101E+01	3.5987E+00	4.3184E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7338E-03	2.4438E-02	5.7281E-02
O	5.6472E-01	6.3897E-01	6.1147E-01
O+	1.4390E-04	4.2898E-03	1.4586E-02
O++	5.2306E-21	4.0737E-13	9.5829E-11
O-	1.4216E-05	4.2374E-04	6.4124E-04
O2	6.1943E-04	5.9233E-04	3.7657E-04
O2+	2.8431E-06	2.5412E-05	4.6483E-05
O2-	2.4383E-08	8.8840E-07	8.6484E-07
C	1.3063E-01	2.9100E-01	2.6739E-01
C+	1.4015E-03	2.0220E-02	4.3128E-02
C++	2.2039E-14	2.7147E-09	9.2926E-08
C-	2.2680E-06	1.4268E-04	2.1153E-04
CO	3.0010E-01	1.8756E-02	4.2472E-03
CO+	2.0209E-04	4.6704E-04	3.8348E-04
CO2	8.2350E-05	4.0970E-06	4.8778E-07
C2	3.4435E-04	6.7309E-04	2.7010E-04

P1 = 1.00E+03 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5668E+02	1.3399E+04	1.7743E+04
T	2.6161E+01	4.0204E+01	4.7428E+01
RHO	1.6205E+01	1.1297E+02	1.2046E+02
M	-2.2999E+00	-5.1553E+00	-6.1210E+00
A	7.2467E+00	1.0789E+01	1.2108E+01
S	2.1979E+00	2.4257E+00	2.5097E+00
Z	2.2566E+00	2.9502E+00	3.1055E+00
GAME	8.8955E-01	9.8135E-01	9.9542E-01
U	2.6386E+01	3.7898E+00	4.0976E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.3994E-03	1.7531E-02	4.2669E-02
O	5.5514E-01	6.4069E-01	6.2526E-01
O+	1.2153E-04	2.7332E-03	9.5462E-03
O++	2.1121E-21	5.6226E-14	1.5099E-11
O-	1.1693E-05	3.5823E-04	5.8371E-04
O2	6.5790E-04	7.4413E-04	4.1638E-04
O2+	2.7176E-06	2.5435E-05	4.0675E-05
O2-	2.1291E-08	9.0848E-07	9.3717E-07
C	1.1167E-01	2.8955E-01	2.7973E-01
C+	1.1011E-03	1.4756E-02	3.3438E-02
C++	1.1088E-14	7.3106E-10	2.8000E-08
C-	1.6149E-06	1.2001E-04	1.9480E-04
CO	3.2922E-01	3.2094E-02	7.2937E-03
CO+	1.8741E-04	4.9560E-04	4.2302E-04
CO2	9.7738E-05	8.9330E-06	1.0865E-06
C2	2.8481E-04	8.9421E-04	3.9325E-04

P1 = 1.00E+03 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0615E+03	1.5064E+04	2.0253E+04
T	2.7136E+01	4.4944E+01	5.3020E+01
RHO	1.6569E+01	1.0933E+02	1.1857E+02
M	-2.6570E+00	-5.8222E+00	-6.9502E+00
A	7.5579E+00	1.1730E+01	1.2930E+01
S	2.2575E+00	2.4933E+00	2.7897E+00
Z	2.3608E+00	3.0655E+00	3.2218E+00
GAME	8.9167E-01	9.9870E-01	9.7866E-01
U	2.7815E+01	4.2225E+00	4.5213E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.1101E-03	3.3750E-02	7.2543E-02
O	5.7411E-01	6.3296E-01	5.9575E-01
O+	1.6967E-04	6.7163E-03	2.0628E-02
O++	1.2422E-20	2.8860E-12	4.3797E-10
O-	1.7014E-05	4.8995E-04	7.0341E-04
O2	5.8647E-04	4.6599E-04	2.6505E-04
O2+	2.9884E-06	3.3859E-05	5.1766E-05
O2-	2.7637E-08	8.4395E-07	7.9792E-07
C	1.4922E-01	2.8646E-01	2.5415E-01
C+	1.7423E-03	2.7223E-02	5.2440E-02
C++	4.1915E-14	9.8334E-09	2.4729E-07
C-	3.0632E-06	1.6548E-04	2.2119E-04
CO	2.7135E-01	1.0806E-02	2.6979E-03
CO+	2.1531E-04	4.3251E-04	3.4887E-04
CO2	6.9281E-05	1.8310E-06	2.4761E-07
C2	4.0044E-04	4.8904E-04	1.9229E-04

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1158E+03	1.5916E+04	2.1544E+04
T	2.7616E+01	4.7514E+01	5.5590E+01
RHO	1.6730E+01	1.0745E+02	1.1807E+02
M	-2.8424E+00	-6.1676E+00	-7.3754E+00
A	7.7156E+00	1.2134E+01	1.3316E+01
S	2.2882E+00	2.5259E+00	2.6126E+00
Z	2.4151E+00	3.1177E+00	3.2824E+00
GAME	8.9348E-01	9.9393E-01	9.7177E-01
U	2.8528E+01	4.4478E+00	4.7079E+00

SPECIES	MOLE FRACTIONS		
E-	2.5342E-03	4.5396E-02	8.8707E-02
O	7.8326E-01	6.2216E-01	5.7607E-01
O+	1.9980E-04	1.0220E-02	2.7830E-02
O++	2.8805E-20	1.7909E-11	1.6414E-09
O-	2.0119E-05	5.5134E-04	7.4225E-04
O2	5.5671E-04	3.8797E-04	2.1840E-04
O2+	3.1530E-06	2.8529E-05	5.6529E-05
O2-	7.1035E-08	7.8569E-07	7.3071E-07
C	1.6738E-01	2.7751E-01	2.4043E-01
C+	2.1302E-03	3.5476E-02	6.1471E-02
C++	7.7512E-14	3.2411E-08	5.7627E-07
C-	4.0155E-06	1.8313E-04	2.2508E-04
CO	2.4317E-01	6.3606E-03	1.7978E-03
CO+	2.2714E-04	3.9633E-04	3.1658E-04
CO2	5.7961E-05	8.3925E-07	1.3416E-07
C2	4.5113E-04	3.4346E-04	1.3893E-04

P1 = 1.00E+03 N/SQ-M, US1 = 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2285E+03	1.7672E+04	2.4162E+04
T	2.8605E+01	5.2306E+01	6.0215E+01
RHO	1.6552E+01	1.0490E+02	1.1784E+02
M	-3.2268E+00	-6.8841E+00	-8.2484E+00
A	8.0601E+00	1.2841E+01	1.4049E+01
S	2.3497E+00	2.5877E+00	2.6763E+00
Z	2.5276E+00	3.2207E+00	3.4050E+00
GAME	8.9860E-01	9.7914E-01	9.6263E-01
U	2.9949E+01	4.8580E+00	5.0451E+00

SPECIES	MOLE FRACTIONS		
E-	3.5849E-03	7.2112E-02	1.2056E-01
O	6.0067E-01	5.5675E-01	5.4066E-01
O+	2.7881E-04	2.0027E-02	4.4292E-02
O++	1.5305E-19	3.3570E-10	1.3236E-08
O-	2.7407E-05	6.4344E-04	7.8427E-04
O2	5.0084E-04	2.4566E-04	1.5615E-04
O2+	3.5421E-06	4.7174E-05	6.3874E-05
O2-	3.8125E-08	6.7106E-07	6.1116E-07
C	2.0206E-01	2.5426E-01	2.1505E-01
C+	3.0899E-03	5.2552E-02	7.6946E-02
C++	2.5501E-13	2.1616E-07	2.1689E-06
C-	6.4630E-06	2.0256E-04	2.2104E-04
CO	1.8856E-01	2.6413E-03	9.2175E-04
CO+	2.4662E-04	3.3251E-04	2.6197E-04
CO2	3.9276E-05	2.2692E-07	4.8309E-08
C2	4.2913E-04	1.8173E-04	7.7953E-05

P1 = 1.00E+03 N/SQ-M, US1 = 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1715E+03	1.6787E+04	2.2849E+04
T	2.8103E+01	4.9574E+01	5.7966E+01
RHO	1.6872E+01	1.0601E+02	1.1790E+02
M	-3.0323E+00	-6.5216E+00	-7.8080E+00
A	7.8866E+00	1.2498E+01	1.3686E+01
S	2.3189E+00	2.5572E+00	2.6448E+00
Z	2.4708E+00	3.1688E+00	3.7432E+00
GAME	8.9578E-01	9.8640E-01	9.6655E-01
U	2.9239E+01	4.6600E+00	4.8815E+00

SPECIES	MOLE FRACTIONS		
E-	3.0228E-03	5.8340E-02	1.0468E-01
O	5.9213E-01	6.1085E-01	5.5970E-01
O+	2.3558E-04	1.4677E-02	3.5723E-02
O++	6.6223E-20	8.6409E-11	5.0057E-09
O-	2.3567E-05	6.0264E-04	7.6860E-04
O2	5.2854E-04	2.9756E-04	1.8366E-04
O2+	3.3371E-06	4.3017E-05	6.0561E-05
O2-	7.2728E-08	7.2728E-07	6.6941E-07
C	1.8502E-01	2.6635E-01	2.2740E-01
C+	2.5750E-03	4.4055E-02	6.9598E-02
C++	1.4115E-13	9.0065E-08	1.1714E-06
C-	5.1419E-06	1.5932E-04	2.2468E-04
CO	2.1568E-01	3.9864E-03	1.2649E-03
CO+	2.3759E-04	3.6295E-04	2.8802E-04
CO2	4.8035E-05	4.1982E-07	7.8541E-08
C2	4.9460E-04	2.4740E-04	1.0320E-04

P1 = 1.00E+03 N/SQ-M, US1 = 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2867E+03	1.8564E+04	2.5474E+04
T	2.9126E+01	5.4509E+01	6.2363E+01
RHO	1.7087E+01	1.0403E+02	1.1779E+02
M	-3.4255E+00	-7.2550E+00	-8.6969E+00
A	8.2418E+00	1.3177E+01	1.4407E+01
S	2.3808E+00	2.6176E+00	2.7074E+00
Z	2.5854E+00	3.2739E+00	3.4680E+00
GAME	9.0206E-01	9.7302E-01	9.5976E-01
U	3.0656E+01	5.0428E+00	5.2010E+00

SPECIES	MOLE FRACTIONS		
E-	4.2439E-03	8.6329E-02	1.3627E-01
O	6.0885E-01	5.8139E-01	5.2115E-01
O+	3.3209E-04	2.6169E-02	5.3430E-02
O++	3.6062E-19	1.0873E-09	3.1327E-08
O-	3.1701E-05	6.7420E-04	7.9056E-04
O2	4.7268E-04	2.0626E-04	1.3370E-04
O2+	3.7705E-06	5.0899E-05	6.6447E-05
O2-	4.1745E-08	6.1773E-07	5.5547E-07
C	2.1843E-01	2.4201E-01	2.0342E-01
C+	3.6937E-03	6.0683E-02	8.3537E-02
C++	4.6680E-13	4.5942E-07	3.7358E-06
C-	8.0038E-06	2.0564E-04	2.1499E-04
CO	1.6310E-01	1.8335E-03	6.8934E-04
CO+	2.5410E-04	3.0477E-04	2.3803E-04
CO2	3.1536E-05	1.3091E-07	3.0808E-08
C2	5.5305E-04	1.3601E-04	5.9646E-05

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1 = 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3461E+03	1.9456E+04	2.6776E+04
T	2.9683E+01	5.6595E+01	6.4443E+01
RMD	1.7152E+01	1.0328E+02	1.1761E+02
H	-1.6295E+00	-7.6340E+00	-9.1534E+00
A	8.4337E+00	1.3504E+01	1.4766E+01
S	2.4120E+00	2.6471E+00	2.7385E+00
Z	2.6435E+00	3.3285E+00	3.5328E+00
GAME	9.0621E-01	9.6810E-01	9.5773E-01
U	3.1360E+01	5.2156E+00	5.3511E+00

SPECIES	MOLE FRACTIONS		
E-	5.0308E-03	1.0075E-01	1.5192E-01
O	6.1659E-01	5.6511E-01	5.0109E-01
C+	3.9933E-04	3.3012E-02	6.3134E-02
O++	8.7978E-19	3.0433E-09	6.8296E-08
D-	3.6530E-05	6.9574E-04	7.8824E-04
O2	4.4330E-04	1.7536E-04	1.1472E-04
O2+	4.0260E-06	5.4127E-05	6.8264E-05
O2-	4.5301E-08	5.6706E-07	5.0124E-07
C	2.3401E-01	2.2999E-01	1.9240E-01
C+	4.4139E-03	6.8303E-02	8.9484E-02
C++	8.6625E-13	8.8599E-07	6.1034E-06
C-	9.7977E-06	2.0536E-04	2.0699E-04
CO	-1.3821E-01	1.3203E-03	5.2419E-04
CO+	2.5986E-04	2.7932E-04	2.1568E-04
CO2	2.4724E-05	7.9484E-08	2.0092E-08
C2	-5.6470E-04	1.0341E-04	4.5961E-05

P1 = 1.00E+03 N/SQ-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4684E+03	2.1189E+04	2.9283E+04
T	3.0558E+01	6.0476E+01	6.8367E+01
RMD	1.7173E+01	1.0181E+02	1.1688E+02
H	-4.0502E+00	-8.4153E+00	-1.0091E+01
A	8.8621E+00	1.4145E+01	1.5474E+01
S	2.4746E+00	2.7051E+00	2.7993E+00
Z	2.7621E+00	3.4415E+00	3.6645E+00
GAME	9.1846E-01	9.6130E-01	9.5580E-01
U	3.2757E+01	5.5339E+00	5.6388E+00

SPECIES	MOLE FRACTIONS		
E-	7.2007E-03	1.2965E-01	1.8213E-01
O	6.3042E-01	5.3062E-01	4.6080E-01
O+	6.0412E-04	4.8452E-02	8.3409E-02
O++	6.2191E-18	1.7077E-08	2.6043E-07
D-	4.8277E-05	7.1427E-04	7.6257E-04
O2	3.7813E-04	1.2971E-04	8.5052E-05
O2+	4.6430E-06	5.8918E-05	6.9658E-05
O2-	5.1802E-08	4.7198E-07	4.0120E-07
C	2.6216E-01	2.0733E-01	1.7262E-01
C+	6.3859E-03	8.1813E-02	9.9396E-02
C++	3.3031E-12	2.6479E-06	1.4169E-05
C-	1.4305E-05	1.9738E-04	1.8770E-04
CO	9.1954E-02	7.4119E-04	3.1736E-04
CO+	2.6506E-04	2.3399E-04	1.7634E-04
CO2	1.3651E-05	3.2716E-08	9.1082E-09
C2	5.4470E-04	6.1931E-05	2.8019E-05

P1 = 1.00E+03 N/SQ-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4067E+03	2.0336E+04	2.8032E+04
T	3.0287E+01	5.8580E+01	6.6420E+01
RMD	1.7183E+01	1.0257E+02	1.1740E+02
H	-3.8376E+00	-8.0209E+00	-9.6181E+00
A	8.6350E+00	1.3826E+01	1.5118E+01
S	2.4432E+00	2.6762E+00	2.7687E+00
Z	2.7030E+00	3.3844E+00	3.5975E+00
GAME	9.1165E-01	9.6425E-01	9.5646E-01
U	3.2061E+01	5.3788E+00	5.4967E+00

SPECIES	MOLE FRACTIONS		
E-	5.9923E-03	1.1522E-01	1.6701E-01
O	6.2383E-01	5.4813E-01	4.8120E-01
O+	4.8669E-04	4.0467E-02	7.3030E-02
O++	2.2617E-18	7.5651E-09	1.3665E-07
D-	4.2005E-05	7.0886E-04	7.7906E-04
O2	4.1200E-04	1.5039E-04	9.8956E-05
O2+	4.3141E-06	5.6813E-05	6.9344E-05
O2-	4.8701E-08	5.1859E-07	4.5086E-07
C	2.4865E-01	2.1840E-01	1.8230E-01
C+	5.2916E-03	7.5349E-02	9.4673E-02
C++	1.6561E-12	1.5806E-06	9.4410E-06
C-	1.1879E-05	2.0242E-04	1.9797E-04
CO	1.1444E-01	9.7839E-04	4.0672E-04
CO+	2.6363E-04	2.5582E-04	1.9548E-04
CO2	1.8783E-05	5.0223E-08	1.3488E-08
C2	5.6244E-04	7.9629E-05	3.5880E-05

P1 = 1.00E+03 N/SQ-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5312E+03	2.1996E+04	3.0443E+04
T	3.1722E+01	6.2292E+01	7.0231E+01
RMD	1.7113E+01	1.0089E+02	1.1616E+02
H	-4.2672E+00	-8.8167E+00	-1.0570E+01
A	9.1092E+00	1.4460E+01	1.5826E+01
S	2.5058E+00	2.7340E+00	2.8294E+00
Z	2.8207E+00	3.5000E+00	3.7315E+00
GAME	9.2736E-01	9.5909E-01	9.5570E-01
U	3.3446E+01	5.6818E+00	5.7781E+00

SPECIES	MOLE FRACTIONS		
E-	8.7744E-03	1.4398E-01	1.9673E-01
O	6.3620E-01	5.1271E-01	4.4070E-01
O+	7.6905E-04	5.6887E-02	9.3836E-02
O++	1.8937E-17	3.5579E-08	4.6711E-07
D-	5.5559E-05	7.1254E-04	7.4067E-04
O2	3.4114E-04	1.1222E-04	7.3181E-05
O2+	5.0249E-06	6.0414E-05	6.9273E-05
O2-	5.4408E-08	4.2693E-07	3.5492E-07
C	2.7420E-01	1.9680E-01	1.6368E-01
C+	7.8054E-03	8.7713E-02	1.0354E-01
C++	7.0247E-12	4.2130E-06	2.0481E-05
C-	1.7143E-05	1.9067E-04	1.7698E-04
CO	7.1046E-02	5.7111E-04	2.5062E-04
CO+	2.6364E-04	2.1363E-04	1.5892E-04
CO2	9.4426E-06	2.1807E-08	6.2543E-09
C2	5.1018E-04	4.5338E-05	2.2060E-05

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 9.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5949E+03	2.2732E+04	3.1497E+04
T	3.2617E+01	6.4032E+01	7.2055E+01
RHO	1.6991E+01	9.9731E+01	1.1502E+02
H	-4.4887E+00	-9.2243E+00	-1.1057E+01
A	9.3887E+00	1.4773E+01	1.6180E+01
S	2.5369E+00	2.7629E+00	2.8598E+00
Z	7.8779E+00	3.5596E+00	3.8003E+00
GAME	9.3905E-01	9.5752E-01	9.5609E-01
U	3.4128E+01	5.8233E+00	5.9148E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.0910E-02	1.5817E-01	2.1120E-01
O	6.4085E-01	4.9450E-01	4.2045E-01
O+	1.0129E-03	6.5696E-02	1.0450E-01
O++	6.6422E-17	6.9293E-08	8.0537E-07
O-	6.4141E-05	7.0415E-04	7.1295E-04
O2	3.0070E-04	9.7171E-05	6.2638E-05
O2+	5.4777E-06	6.1272E-05	6.8158E-05
O2-	5.6248E-08	3.8726E-07	2.1034E-07
C	2.8426E-01	1.8681E-01	1.5515E-01
C+	9.7174E-03	9.3090E-02	1.0730E-01
C++	1.6344E-11	6.4214E-06	2.8918E-05
C-	2.0474E-05	1.8262E-04	1.6544E-04
CO	5.2134E-02	4.4568E-04	1.9846E-04
CO+	2.5876E-04	1.9457E-04	1.4259E-04
CO2	6.0517E-06	1.4779E-08	4.3031E-09
C2	4.5843E-04	3.8252E-05	1.7365E-05

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 1.05\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8237E+03	2.4449E+04	3.3969E+04
T	3.7320E+01	6.9575E+01	7.8031E+01
RHO	1.6010E+01	9.3095E+01	1.0747E+02
H	-5.2981E+00	-1.0690E+01	-1.2800E+01
A	1.0602E+01	1.5851E+01	1.7426E+01
S	2.6418E+00	2.8651E+00	2.9677E+00
Z	3.0523E+00	3.7777E+00	4.0507E+00
GAME	9.8667E-01	9.5953E-01	9.6077E-01
U	3.8426E+01	6.2740E+00	6.3759E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	2.8386E-02	2.0646E-01	2.5578E-01
O	6.4038E-01	4.2972E-01	3.5065E-01
O+	3.6960E-03	9.8500E-02	1.4213E-01
O++	2.1321E-14	4.7517E-07	4.1145E-06
O-	1.0727E-04	6.3095E-04	5.8354E-04
O2	1.5211E-04	5.7908E-05	3.4904E-05
O2+	7.9196E-06	5.9366E-05	5.9444E-05
O2-	5.2838E-08	2.4430E-07	1.7684E-07
C	2.9168E-01	1.5556E-01	1.2833E-01
C+	2.4615E-02	1.0850E-01	1.1803E-01
C++	7.4742E-10	2.1818E-05	8.2475E-05
C-	3.5910E-05	1.4806E-04	1.2461E-04
CO	1.0528E-02	1.9852E-04	8.8760E-05
CO+	2.1062E-04	1.3698E-04	9.4496E-05
CO2	6.0863E-07	4.0685E-09	1.1861E-09
C2	2.0445E-04	1.7009E-05	7.5130E-06

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 1.00\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6594E+03	2.3367E+04	3.2405E+04
T	3.3690E+01	6.5698E+01	7.3824E+01
RHO	1.6795E+01	9.8240E+01	1.1341E+02
H	-4.7146E+00	-9.6372E+00	-1.1549E+01
A	9.7082E+00	1.5083E+01	1.6535E+01
S	2.5676E+00	2.7918E+00	2.8904E+00
Z	2.9327E+00	3.6204E+00	3.8703E+00
GAME	9.5390E-01	9.5650E-01	9.5693E-01
U	3.4799E+01	5.9586E+00	6.0490E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.3929E-02	1.7220E-01	2.2541E-01
O	6.4389E-01	4.7610E-01	4.0029E-01
O+	1.3934E-03	7.4808E-02	1.1525E-01
O++	2.8035E-16	1.2732E-07	1.3353E-06
O-	7.4362E-05	6.8951E-04	6.8032E-04
O2	2.5721E-04	8.4061E-05	5.3392E-05
O2+	6.0256E-06	6.1476E-05	6.6362E-05
O2-	5.6991E-08	3.4097E-07	2.6824E-07
C	2.9157E-01	1.7732E-01	1.4704E-01
C+	1.2378E-02	9.7995E-02	1.1071E-01
C++	4.2736E-11	9.4381E-06	3.9905E-05
C-	2.4368E-05	1.7351E-04	1.5395E-04
CO	3.5828E-02	3.5108E-04	1.5759E-04
CO+	2.4977E-04	1.7669E-04	1.2743E-04
CO2	3.5313E-06	1.0133E-08	2.9649E-09
C2	3.9109E-04	3.0259E-05	1.3679E-05

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, } US1 = 1.10\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9947E+03	2.5459E+04	3.5379E+04
T	4.1452E+01	7.3278E+01	8.2238E+01
RHO	1.5234E+01	8.8145E+01	1.0150E+02
H	-5.9093E+00	-1.1765E+01	-1.4105E+01
A	1.1332E+01	1.6631E+01	1.8359E+01
S	2.7113E+00	2.9377E+00	3.0449E+00
Z	3.1587E+00	3.9415E+00	4.2385E+00
GAME	9.8069E-01	9.5766E-01	9.6692E-01
U	3.8031E+01	6.5829E+00	6.7130E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	5.3805E-02	2.3931E-01	2.9251E-01
O	6.2028E-01	3.8343E-01	3.0228E-01
O+	9.3244E-03	1.2302E-01	1.6882E-01
O++	1.2413E-12	1.4676E-06	1.1300E-05
O-	1.3998E-04	5.5896E-04	4.8205E-04
O2	8.8530E-05	3.9565E-05	2.2121E-05
O2+	1.0190E-05	5.5025E-05	5.0892E-05
O2-	4.4502E-08	1.6587E-07	1.1082E-07
C	2.6850E-01	1.3648E-01	1.1164E-01
C+	4.4487E-02	1.1871E-01	1.2380E-01
C++	1.0555E-08	4.4874E-05	1.5987E-04
C-	4.5038E-05	1.2340E-04	9.8213E-05
CO	3.0569E-03	1.1544E-04	4.9811E-05
CO+	1.6876E-04	1.0496E-04	6.8562E-05
CO2	1.0385E-07	1.6970E-09	4.5347E-10
C2	9.3804E-05	9.7241E-06	4.1081E-06

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 1.15E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1749E+03	2.6830E+04	3.7363E+C4
T	4.5127E+01	7.7051E+01	8.6726E+01
RHO	1.4736E+01	8.4710E+01	9.7230E+01
M	-6.5495E+00	-1.2938E+01	-1.5491E+01
A	1.1954E+01	1.7450E+01	1.9360E+01
S	2.7770E+00	3.0085E+00	3.1201E+00
Z	3.2706E+00	4.1106E+00	4.4308E+00
GAME	9.6819E-01	9.6141E-01	9.7535E-01
U	3.9665E+01	6.9094E+00	7.0837E+00

SPECIES	MOLE FRACTIONS		
E-	8.4297E-02	2.7052E-01	3.2316E-01
O	5.9145E-01	3.3789E-01	2.5809E-01
O+	1.8454E-02	1.4786E-01	1.9468E-01
O++	2.5075E-11	4.0648E-06	2.9262E-05
O-	1.6247E-04	4.8531E-04	3.8704E-04
O2	5.7612E-05	2.6845E-05	1.3627E-05
O2+	1.2245E-05	4.9636E-05	4.2094E-05
O2-	3.7115E-08	1.1656E-07	6.7065E-08
C	2.3827E-01	1.1988E-01	9.6946E-02
C+	6.5904E-02	1.2294E-01	1.2819E-01
C++	7.2632E-08	8.6301E-05	3.0073E-04
C-	4.8847E-05	1.0176E-04	7.6131E-05
CO	1.1645E-03	6.8361E-05	2.7742E-05
CO+	1.3717E-04	7.9786E-05	4.8859E-04
CO2	2.6059E-08	7.2764E-10	1.7408E-10
C2	4.7256E-05	5.6455E-06	2.2373E-06

P1 = 1.00E+03 N/SQ-M, US1= 1.25E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5627E+03	3.0420E+04	4.2706E+04
T	5.1237E+01	8.5057E+01	9.7117E+01
RHO	1.4226E+01	8.0167E+01	9.1089E+01
M	-7.9165E+00	-1.5416E+01	-1.8525E+01
A	1.3117E+01	1.9232E+01	2.1638E+01
S	2.9022E+00	3.1457E+00	3.2672E+00
Z	3.5158E+00	4.4612E+00	4.8276E+00
GAME	9.5516E-01	9.7471E-01	9.9861E-01
U	4.3002E+01	7.6415E+00	7.9544E+00

SPECIES	MOLE FRACTIONS		
E-	1.4727E-01	3.2775E-01	3.7872E-01
O	5.2289E-01	2.5164E-01	1.7179E-01
O+	4.5324E-02	1.9614E-01	2.4200E-01
O++	1.4277E-09	2.9235E-05	1.8289E-04
O-	1.8066E-04	3.3900E-04	2.2007E-04
O2	2.9870E-05	1.1565E-05	4.4008E-06
O2+	1.5150E-05	3.6782E-05	2.5039E-05
O2-	2.5886E-08	5.0042E-08	2.0167E-08
C	1.8179E-01	9.2321E-02	7.1458E-02
C+	1.0206E-01	1.3131E-01	1.3447E-01
C++	9.2094E-07	2.8448E-04	1.0547E-03
C-	4.6552E-05	6.6071E-05	4.1790E-05
CO	2.8602E-04	2.3869E-05	7.7245E-06
CO+	9.3516E-05	4.4077E-05	2.2391E-05
CO2	3.4670E-09	1.3180E-10	2.1424E-11
C2	1.9199E-05	1.9001E-06	6.0432E-07

P1 = 1.00E+03 N/SQ-M, US1= 1.20E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3643E+03	2.8517E+04	3.9842E+04
T	4.8341E+01	8.0960E+01	9.1646E+01
RHO	1.4427E+01	8.2216E+01	9.3938E+01
M	-7.2186E+00	-1.4149E+01	-1.6962E+01
A	1.2544E+01	1.8315E+01	2.0451E+01
S	2.8403E+00	3.0777E+00	3.1941E+00
Z	3.3901E+00	4.2842E+00	4.6279E+00
GAME	9.6007E-01	9.6711E-01	9.8609E-01
U	4.1325E+01	7.2619E+00	7.4891E+00

SPECIES	MOLE FRACTIONS		
E-	1.1595E-01	3.0002E-01	3.5194E-01
O	5.5839E-01	2.9378E-01	2.1234E-01
O+	3.0611E-02	1.7241E-01	2.1931E-01
O++	2.3937E-10	1.0418E-05	7.3656E-05
O-	1.7529E-04	4.1150E-04	2.9896E-04
O2	4.0586E-05	1.7883E-05	7.9982E-06
O2+	1.3913E-05	4.3461E-05	3.3333E-05
O2-	3.1031E-08	7.7923E-08	3.8267E-08
C	2.0865E-01	1.0530E-01	8.3666E-02
C+	8.9434E-02	1.2766E-01	1.3165E-01
C++	3.0230E-07	1.5886E-04	5.6175E-04
C-	4.8817E-05	8.2771E-05	5.7444E-05
CO	5.4238E-04	4.0807E-05	1.4991E-05
CO+	1.1298E-04	5.9864E-05	3.3759E-05
CO2	8.7159E-09	3.1280E-10	6.3529E-11
C2	2.6022E-05	3.2889E-06	1.1877E-06

P1 = 1.00E+03 N/SQ-M, US1= 1.30E+04 N/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7696E+03	3.2473E+04	4.5865E+04
T	5.3915E+01	8.9405E+01	1.0327E+02
RHO	1.4085E+01	7.8275E+01	8.8352E+01
M	-8.6431E+00	-1.6735E+01	-2.0174E+01
A	1.3683E+01	2.0206E+01	2.2911E+01
S	2.9633E+00	3.2126E+00	3.3396E+00
Z	3.6462E+00	4.6401E+00	5.0268E+00
GAME	9.5232E-01	9.8414E-01	1.0112E+00
U	4.4689E+01	8.0543E+00	8.4635E+00

SPECIES	MOLE FRACTIONS		
E-	1.7764E-01	3.5365E-01	4.0332E-01
O	4.8590E-01	2.1201E-01	1.3533E-01
O+	6.2108E-02	2.1856E-01	2.6187E-01
O++	6.2435E-09	5.8768E-05	4.5176E-04
O-	1.8030E-04	2.7004E-04	1.5320E-04
O2	2.2487E-05	7.1873E-06	2.2414E-06
O2+	1.5934E-05	2.9964E-05	1.7700E-05
O2-	2.1442E-08	3.0498E-08	9.6576E-09
C	1.5817E-01	8.0591E-02	6.0105E-02
C+	1.1566E-01	1.3422E-01	1.3649E-01
C++	2.2851E-06	5.0203E-04	2.0031E-03
C-	4.3112E-05	5.1505E-05	2.9057E-05
CO	1.6323E-04	1.3718E-05	3.7408E-06
CO+	7.7419E-05	3.1667E-05	1.4119E-05
CO2	1.5356E-09	5.3375E-11	6.5286E-12
C2	9.2379E-06	1.0770E-06	2.9029E-07

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, US1= 1.35\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9851E+03	3.4630E+04	4.9270E+04
T	5.6445E+01	9.4081E+01	1.1004E+02
RHO	1.3987E+01	7.6382E+01	8.5841E+01
H	-9.3984E+00	-1.8104E+01	-2.1910E+01
A	1.4246E+01	2.1240E+01	2.4192E+01
S	3.0232E+00	3.2782E+00	3.4095E+00
Z	3.7808E+00	4.8191E+00	5.2162E+00
GAME	9.5095E-01	9.9504E-01	1.0197E+00
U	4.6382E+01	8.5048E+00	9.0180E+00

SPECIES	MOLE FRACTIONS		
E-	2.0684E-01	3.7763E-01	4.2498E-01
O	4.4811E-01	1.7540E-01	1.0477E-01
O+	8.0470E-02	2.3919E-01	2.7743E-01
O++	2.1966E-08	1.3338E-04	1.0820E-03
O-	1.7552E-04	2.0704E-04	1.0210E-04
O2	1.7099E-05	4.2549E-06	1.0791E-06
O2+	1.6265E-05	2.3299E-05	1.1901E-05
O2-	1.7570E-08	1.7453E-08	4.3043E-09
C	1.3767E-01	6.5858E-02	4.9872E-02
C+	1.2649E-01	1.3661E-01	1.3796E-01
C++	4.9472E-06	8.8174E-04	3.7651E-03
C-	3.9139E-05	3.9021E-05	1.9485E-05
CO	9.8147E-05	7.6271E-06	1.7344E-06
CO+	6.3925E-05	2.2075E-05	8.5544E-06
CO2	7.2857E-10	2.0428E-11	1.8575E-12
C2	5.7735E-06	5.9298E-07	1.3376E-07

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, US1= 1.45\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4406E+03	3.9133E+04	5.6584E+04
T	6.1247E+01	1.0470E+02	1.2480E+02
RHO	1.3835E+01	7.2358E+01	8.1544E+01
H	-1.0995E+01	-2.0990E+01	-2.3601E+01
A	1.5383E+01	2.3443E+01	2.6499E+01
S	3.1422E+00	3.4055E+00	3.5442E+00
Z	4.0603E+00	5.1677E+00	5.5604E+00
GAME	9.5157E-01	1.0162E+00	1.0119E+00
U	4.9775E+01	9.5285E+00	1.0149E+01

SPECIES	MOLE FRACTIONS		
E-	2.6136E-01	4.1936E-01	4.6056E-01
O	3.7222E-01	1.1353E-01	6.2340E-02
O+	1.2006E-01	2.7284E-01	2.9218E-01
O++	1.7606E-07	6.5271E-04	5.1108E-03
O-	1.5644E-04	1.0754E-04	4.3081E-05
O2	9.8701E-06	1.2654E-06	2.3810E-07
O2+	1.5667E-05	1.2455E-05	4.9573E-06
O2-	1.1275E-08	4.6310E-09	7.9636E-10
C	1.0465E-01	5.0866E-02	3.3181E-02
C+	1.4129E-01	1.3988E-01	1.3495E-01
C++	1.7622E-05	2.7231E-03	1.1626E-02
C-	3.0923E-05	2.0286E-05	8.2978E-06
CO	3.8897E-05	2.0795E-06	3.5991E-07
CO+	4.2926E-05	9.6436E-06	2.9422E-06
CO2	1.8354E-10	2.4289E-12	1.4628E-13
C2	2.3758E-06	1.6013E-07	2.7032E-08

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, US1= 1.40\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2098E+03	3.6837E+04	5.2829E+04
T	5.8896E+01	9.9155E+01	1.1735E+02
RHO	1.3897E+01	7.4368E+01	8.3437E+01
H	-1.0182E+01	-1.9523E+01	-2.3724E+01
A	1.4816E+01	2.2327E+01	2.5413E+01
S	3.0835E+00	3.3426E+00	3.4782E+00
Z	3.9203E+00	4.9955E+00	5.3953E+00
GAME	9.5076E-01	1.0064E+00	1.0200E+00
U	4.8078E+01	8.9554E+00	9.5904E+00

SPECIES	MOLE FRACTIONS		
E-	2.3502E-01	3.9959E-01	4.4406E-01
O	4.0970E-01	1.4235E-01	8.0318E-02
O+	1.0012E-01	2.5750E-01	2.8782E-01
O++	6.6579E-08	2.9747E-04	2.4711E-03
O-	1.6713E-04	1.5221E-04	6.5959E-05
O2	1.2981E-05	2.3828E-06	5.0004E-07
O2+	1.6153E-05	1.7453E-05	7.6863E-06
O2-	1.4153E-08	9.2997E-09	1.8246E-09
C	1.1979E-01	5.9951E-02	4.0756E-02
C+	1.3501E-01	1.3854E-01	1.3762E-01
C++	9.7348E-06	1.5500E-03	6.8735E-03
C-	3.4950E-05	2.8608E-05	1.2681E-05
CO	6.0810E-05	4.0668E-06	7.7908E-07
CO+	5.2429E-05	1.4853E-05	5.0081E-06
CO2	3.5840E-10	7.2921E-12	5.0672E-13
C2	3.6622E-06	3.1427E-07	5.9522E-08

 $p_1 = 1.00\text{E}+03 \text{ N/SQ-M, US1= 1.50\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6807E+03	4.1445E+04	6.0404E+04
T	6.3592E+01	1.1067E+02	1.3192E+02
RHO	1.3766E+01	7.0301E+01	8.0130E+01
H	-1.1836E+01	-2.2505E+01	-2.7538E+01
A	1.5965E+01	2.4536E+01	2.7469E+01
S	3.2013E+00	3.4669E+00	3.6076E+00
Z	4.2046E+00	5.3271E+00	5.7145E+00
GAME	9.5333E-01	1.0211E+00	1.0009E+00
U	5.1475E+01	1.0091E+01	1.0685E+01

SPECIES	MOLE FRACTIONS		
E-	2.8668E-01	4.3694E-01	4.7510E-01
O	3.3493E-01	8.9438E-02	4.9655E-02
O+	1.4049E-01	2.8451E-01	2.9098E-01
O++	4.2986E-07	1.3933E-03	9.3183E-03
O-	1.4361E-04	7.3511E-05	2.9292E-05
O2	7.4087E-06	6.4397E-07	1.2171E-07
O2+	1.4830E-05	8.5510E-06	3.2834E-06
O2-	8.7730E-09	2.1816E-09	3.7730E-10
C	9.1367E-02	4.2628E-02	2.7173E-02
C+	1.4624E-01	1.4026E-01	1.2996E-01
C++	3.0446E-05	4.7260E-03	1.7775E-02
C-	2.7002E-05	1.3972E-05	5.6043E-06
CO	2.5077E-05	1.0270E-06	1.7811E-07
CO+	3.4794E-05	6.0624E-06	1.7843E-06
CO2	9.4394E-11	7.6915E-13	4.7819E-14
C2	1.5451E-06	7.8772E-08	1.3038E-08

TABLE I.- Continued

$$p_1 = 1 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 1.55E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9282E+03	4.3760E+04	6.4210E+C4
T	6.5940E+01	1.1694E+02	1.3866E+02
PHO	1.3691E+01	6.8306E+01	7.8938E+01
H	-1.2705E+01	-2.4064E+01	-2.9504E+C1
A	1.6562E+01	2.5548E+01	2.8396E+01
S	3.2601E+00	3.5270E+00	3.6705E+00
Z	4.3512E+00	5.4784E+00	5.8661E+00
GAME	9.5600E-01	1.0188E+00	9.9125E-01
U	5.3164E+01	1.0670E+01	1.1147E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.1071E-01	4.5248E-01	4.8866E-01
O	2.9854E-01	7.0292E-02	4.0407E-02
O+	1.6089E-01	2.9189E-01	2.8525E-01
O++	9.8113E-07	2.8291E-03	1.5256E-02
O-	1.2926E-04	4.9499E-05	2.0680E-05
O2	5.4803E-06	3.2274E-07	6.6251E-08
O2+	1.3710E-05	5.7382E-06	2.2272E-06
O2-	6.6618E-09	1.0051E-09	1.9250E-10
C	7.9774E-02	3.5376E-02	2.2361E-02
C+	1.4982E-01	1.3914E-01	1.2314E-01
C++	5.0665E-05	7.9233E-03	2.4892E-02
C-	2.3300E-05	9.4656E-06	3.9003E-06
CO	1.6239E-05	5.0115E-07	9.3603E-08
CO+	2.7927E-05	3.7399E-06	1.1128E-06
CO2	4.8510E-11	2.4027E-13	1.7396E-14
C2	1.0064E-06	3.8122E-08	6.6328E-09

P1 = 1.00E+03 N/SQ-M, US1= 1.60E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1836E+03	4.6133E+04	6.8045E+C4
T	6.8324E+01	1.2319E+02	1.4482E+C2
PHO	1.3607E+01	6.6654E+01	7.8154E+C1
H	-1.3602E+01	-2.5676E+01	-3.1525E+01
A	1.7177E+01	2.6448E+01	2.9279E+C1
S	3.3187E+00	3.5850E+00	3.7304E+C0
Z	4.4959E+00	5.6184E+00	6.0120E+C0
GAME	9.5963E-01	1.0107E+00	9.8465E-01
U	5.4853E+01	1.1210E+01	1.1586E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.3347E-01	4.6612E-01	5.0107E-01
O	2.6327E-01	5.6022E-02	3.7399E-02
O+	1.8099E-01	2.9463E-01	2.7641E-01
O++	2.1311E-06	5.2766E-03	2.2497E-02
O-	1.1423E-04	3.3885E-05	1.5321E-05
O2	3.9757E-06	1.6726E-07	3.9049E-08
O2+	1.2372E-05	3.8772E-06	1.5694E-06
O2-	4.9158E-09	4.8065E-10	1.0790E-10
C	6.9581E-02	2.9351E-02	1.8671E-02
C+	1.5241E-01	1.3612E-01	1.1549E-01
C++	8.2200E-05	1.2426E-02	3.2094E-02
C-	1.9847E-05	6.4827E-06	2.8376E-06
CO	1.0485E-05	2.5275E-07	5.3283E-08
CO+	2.2143E-05	2.3310E-06	7.2486E-07
CO2	2.4640E-11	7.9929E-14	7.2457E-15
C2	6.5297E-07	1.8934E-08	3.6468E-09

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

$P_1 = 2.00E+03 \text{ N/SQ-M}$, $US_1 = 1.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHD	6.1029E+00	1.9532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0764E+00	1.0899E+00	1.1095E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1126E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.6040E-52	2.2686E-42	7.9743E-34
O	1.6285E-14	1.0412E-11	6.0468E-10
O+	1.0048E-37	6.6909E-34	4.6927E-31
O++	0.	0.	0.
D-	4.6765E-58	1.4219E-47	2.9080E-38
D2	4.5992E-04	4.3992E-04	4.4043E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9638E-42	3.6941E-34
C	3.7314E-53	3.2772E-44	3.2928E-36
C+	2.0585E-63	4.6751E-55	1.2505E-47
C++	0.	0.	0.
C-	5.3639E-98	4.8585E-81	3.2660E-65
CO	1.1426E-11	1.0999E-08	1.0505E-06
CO+	1.6607E-30	3.6517E-32	7.9001E-29
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	2.2886E-77	1.9888E-64	1.5009E-52

$P_1 = 2.00E+03 \text{ N/SQ-M}$, $US_1 = 1.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9425E+02	2.9145E+02
T	3.8892E+00	5.6810E+00	6.5220E+00
RHD	8.0418E+00	3.4175E+01	4.4547E+01
H	8.8932E-01	8.0788E-01	7.6516E-01
A	1.8039E+00	2.2615E+00	2.4119E+00
S	1.1422E+00	1.1696E+00	1.1923E+00
Z	1.0000E+00	1.0000E+00	1.0032E+00
GAME	9.1254E-01	8.9975E-01	8.8916E-01
U	4.5382E+00	1.0705E+00	9.9769E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.0579E-35	1.0236E-19	7.8744E-17
O	3.5819E-10	7.3173E-07	1.1871E-05
O+	1.5125E-31	7.9058E-27	1.4060E-23
O++	0.	0.	4.4023E-93
D-	1.1339E-39	1.3659E-22	2.0955E-19
D2	4.4019E-04	1.0134E-03	3.5856E-03
O2+	1.7597E-18	1.6475E-18	9.0613E-17
O2-	1.1753E-35	8.6102E-21	9.9087E-18
C	3.4058E-37	5.7920E-24	1.6834E-20
C+	1.5267E-48	2.1853E-36	4.3434E-32
C++	0.	1.3609E-85	3.5559E-76
C-	3.7942E-67	3.3587E-39	1.2897E-34
CO	5.3902E-07	1.1481E-03	6.3060E-03
CO+	2.0365E-29	4.1373E-24	2.7410E-21
CO2	9.9956E-01	9.9784E-01	9.9010E-01
C2	5.4537E-54	4.6418E-34	5.9003E-30

$P_1 = 2.00E+03 \text{ N/SQ-M}$, $US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2170E+02	1.9025E+02
T	3.1957E+00	4.5032E+00	5.2576E+00
RHD	7.1505E+00	2.7027E+01	3.6177E+01
H	9.1903E-01	8.6219E-01	8.2788E-01
A	1.7137E+00	2.0228E+00	2.1801E+00
S	1.1092E+00	1.1299E+00	1.1514E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1903E-01	9.0868E-01	9.0383E-01
U	3.8201E+00	1.0100E+00	9.3876E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.1749E-42	2.3609E-26	1.4970E-22
O	1.5076E-12	3.9743E-09	1.4093E-07
O+	3.4547E-34	1.3806E-29	2.0255E-27
O++	0.	0.	0.
D-	2.4880E-47	3.4608E-30	5.6747E-20
D2	4.5992E-04	4.4399E-04	5.9041E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	4.0048E-42	2.0185E-27	1.2407E-23
C	8.2409E-44	2.2504E-29	3.9705E-26
C+	1.0782E-54	2.2855E-41	1.7273E-38
C++	0.	4.3355E-98	6.9090E-92
C-	3.9205E-80	2.2962E-51	6.9831E-45
CO	2.6316E-09	8.1499E-06	3.1728E-04
CO+	2.2805E-32	1.0111E-26	9.5982E-25
CO2	9.9956E-01	9.9955E-01	9.9908E-01
C2	8.9429E-64	2.6799E-42	1.0439E-37

$P_1 = 2.00E+03 \text{ N/SQ-M}$, $US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1025E+01	2.8702E+02	4.1484E+02
T	4.6614E+00	6.8739E+00	7.6528E+00
RHD	8.8012E+00	4.1515E+01	5.3376E+01
H	8.5508E-01	7.4489E-01	6.9423E-01
A	2.0569E+00	2.4711E+00	2.6045E+00
S	1.1747E+00	1.2085E+00	1.2320E+00
Z	1.0000E+00	1.0058E+00	1.0150E+00
GAME	9.0758E-01	8.8322E-01	8.7277E-01
U	5.2491E+00	1.1142E+00	1.0342E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.2332E-25	6.0270E-16	3.0514E-14
O	1.8754E-08	3.4823E-05	2.1043E-04
O+	3.9927E-29	1.2131E-22	8.3447E-20
O++	0.	3.7075E-87	2.2917E-81
D-	8.2745E-29	2.0929E-18	3.6228E-16
D2	4.6239E-04	6.1835E-03	1.5505E-02
O2+	1.7596E-18	6.8736E-16	3.7531E-14
O2-	1.9622E-26	8.0848E-17	6.6000E-15
C	3.6142E-28	1.7598E-19	5.7280E-17
C+	2.4032E-40	3.7721E-30	4.8419E-27
C++	5.5047E-96	3.5163E-71	8.5047E-68
C-	4.8302E-49	2.0038E-32	3.1946E-29
CO	4.4978E-05	1.1527E-02	3.0474E-02
CO+	9.6094E-27	2.8508E-20	6.7029E-18
CO2	9.9949E-01	9.8225E-01	9.5375E-01
C2	1.1197E-40	1.8763E-28	3.5745E-25

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2111E+01	4.0258E+02	5.6175E+02
T	5.4983E+00	7.9167E+00	8.5887E+00
RHD	9.4715E+00	4.9770E+01	6.2892E+01
H	8.1620E+01	6.7299E+01	6.1497E+01
A	2.2250E+00	2.6515E+00	2.7791E+00
S	1.2003E+00	1.2472E+00	1.2721E+00
Z	1.0003E+00	1.0217E+00	1.0400E+00
GAME	8.9983E-01	8.6919E-01	8.6469E-01
U	5.9582E+00	1.1358E+00	1.0545E+00

SPECIES	MOLE FRACTIONS		
E-	2.5310E-20	1.0788E-13	1.2130E-12
O	8.4340E-07	3.9119E-04	1.2124E-03
U+	1.1133E-20	5.8052E-19	1.8143E-17
O++	0.	8.4681E-78	8.8809E-70
O-	8.0029E-24	1.7137E-15	3.6300E-14
O2	1.0009E-03	2.1272E-02	3.7680E-02
O2+	1.7447E-18	1.3401E-13	1.6271E-12
O2-	7.3214E-22	2.4449E-14	3.7804E-13
C	1.8830E-24	3.2843E-16	8.5007E-15
C+	4.1683E-37	7.6331E-26	3.8579E-24
C++	9.0631E-42	2.1487E-63	5.0983E-57
C-	7.1836E-42	5.8905E-28	3.0010E-26
CO	1.1633E-03	4.2073E-02	7.5727E-02
CO+	3.8016E-24	3.5516E-17	8.4388E-16
CO2	9.9781E-01	9.3626E-01	8.8538E-01
C2	9.8512E-30	4.1875E-24	2.7037E-22

P1 = 2.00E+03 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8547E+01	7.2817E+02	9.6299E+02
T	7.0935E+00	9.5831E+00	1.0180E+01
RHD	1.0934E+01	6.9918E+01	8.4682E+01
H	7.2475E-01	5.0128E-01	4.2777E-01
A	2.5032E+00	2.9973E+00	3.1350E+00
S	1.2675E+00	1.3276E+00	1.3550E+00
Z	1.0126E+00	1.0867E+00	1.1192E+00
GAME	8.7231E-01	8.6265E-01	8.6429E-01
U	7.3963E+00	1.1588E+00	1.0959E+00

SPECIES	MOLE FRACTIONS		
E-	6.0925E-15	2.8891E-11	1.1093E-10
O	1.5324E-04	5.2016E-03	9.4853E-03
O+	7.8791E-21	2.5571E-15	2.1795E-14
O++	1.7461E-86	5.8962E-64	2.7907E-60
O-	2.2933E-17	1.9312E-12	1.1513E-11
O2	1.2751E-02	7.4961E-02	9.7422E-02
O2+	6.4907E-15	4.1882E-11	1.8128E-10
O2-	3.7407E-16	1.1124E-11	5.3278E-11
C	4.4796E-18	7.3623E-13	5.2930E-12
C+	1.3450E-28	7.5506E-21	1.4614E-19
C++	2.5991E-70	4.6393E-52	4.4739E-49
C-	2.4836E-31	1.2730E-22	3.0247E-21
CO	2.4787E-02	1.5431E-01	2.0355E-01
CO+	5.6741E-19	6.1427E-14	4.1954E-13
CO2	9.6231E-01	7.6552E-01	6.8959E-01
C2	5.0574E-27	1.8942E-19	3.0804E-18

P1 = 2.00E+03 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4587E+01	5.4656E+02	7.4008E+02
T	6.3379E+00	8.7964E+00	9.4023E+00
RHD	1.0153E+01	5.9223E+01	7.3210E+01
H	7.7283E-01	5.9195E-01	5.2651E-01
A	2.3746E+00	2.8228E+00	2.9531E+00
S	1.2370E+00	1.2868E+00	1.3132E+00
Z	1.0038E+00	1.0492E+00	1.0750E+00
GAME	8.8636E-01	8.6337E-01	8.6279E-01
U	6.6713E+00	1.1458E+00	1.0728E+00

SPECIES	MOLE FRACTIONS		
E-	4.1081E-17	2.5605E-12	1.6389E-11
O	1.6897E-05	1.7918E-03	3.9451E-03
O+	5.7857E-24	4.5779E-17	1.0810E-15
O++	5.1641E-94	1.1403E-67	1.5575E-65
O-	1.4454E-20	8.5517E-14	9.8841E-13
O2	4.1883E-03	4.5546E-02	6.6207E-02
O2+	4.4330E-17	3.4405E-12	2.3769E-11
O2-	1.4808E-18	7.9655E-13	6.4218E-12
C	1.7020E-21	2.1254E-14	3.4150E-13
C+	6.6088E-32	1.3693E-23	2.2904E-21
C++	1.3881E-76	3.1903E-55	2.4736E-53
C-	8.2402E-35	2.9340E-25	3.7748E-23
CO	7.5170E-03	9.2055E-02	1.3554E-01
CO+	2.7808E-23	2.0615E-15	2.9449E-14
CO2	9.8828E-01	8.6062E-01	7.9431E-01
C2	2.9832E-30	3.7211E-22	6.6607E-20

P1 = 2.00E+03 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3977E+01	9.5354E+02	1.2389E+03
T	7.7351E+00	1.0322E+01	1.0901E+01
RHD	1.1815E+01	8.1562E+01	9.6991E+01
H	6.7204E-01	4.0114E-01	3.1856E-01
A	2.6205E+00	3.1796E+00	3.3244E+00
S	1.2981E+00	1.3696E+00	1.3998E+00
Z	1.0283E+00	1.1326E+00	1.1717E+00
GAME	8.6333E-01	8.6479E-01	8.6784E-01
U	8.1290E+00	1.1797E+00	1.1272E+00

SPECIES	MOLE FRACTIONS		
E-	1.2290E-13	1.7824E-10	5.9106E-10
O	6.7447E-04	1.1643E-02	1.9075E-02
O+	4.9406E-19	4.0681E-14	2.6566E-13
O++	1.7565E-70	3.9846E-59	4.9300E-56
O-	9.1156E-10	1.8718E-11	8.5817E-11
O2	2.7263E-02	1.0583E-01	1.2784E-01
O2+	1.3358E-13	2.7542E-10	9.6790E-10
O2-	9.7910E-15	7.9213E-11	2.9519E-10
C	2.2801E-10	9.2660E-12	5.1486E-11
C+	1.6358E-27	3.3686E-19	4.6409E-18
C++	2.2463E-62	3.4987E-48	1.2983E-45
C-	3.3515E-29	7.0173E-21	1.1270E-19
CO	5.4344E-02	2.2254E-01	2.7401E-01
CO+	2.5149E-17	7.1832E-13	3.8379E-12
CO2	9.1772E-01	6.5999E-01	5.7908E-01
C2	5.1398E-25	6.4319E-18	7.4147E-17

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1085E+02	1.2241E+03	1.5700E+03
T	8.2869E+00	1.1045E+01	1.1650E+01
RHO	1.2738E+01	9.3453E+01	1.0941E+02
H	6.1471E-01	2.9173E-01	1.9887E-01
A	2.7341E+00	3.3731E+00	3.5391E+00
S	1.3294E+00	1.4130E+00	1.4453E+00
Z	1.0501E+00	1.1859E+00	1.2317E+00
GAME	8.5904E-01	8.6866E-01	8.7288E-01
U	8.8652E+00	1.2105E+00	1.1680E+00

P1 = 2.00E+03 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2912E+02	1.5390E+03	1.9562E+03
T	8.7789E+00	1.1772E+01	1.2425E+01
RHO	1.3655E+01	1.0493E+02	1.2121E+02
H	5.5280E-01	1.7328E-01	6.8701E-02
A	2.8477E+00	3.5800E+00	3.7667E+00
S	1.3615E+00	1.4574E+00	1.4920E+00
Z	1.0771E+00	1.2459E+00	1.2988E+00
GAME	8.5759E-01	8.7383E-01	8.7919E-01
U	9.6017E+00	1.2516E+00	1.2189E+00

SPECIES	MOLE FRACTIONS		
E-	1.1653E-12	9.1981E-10	2.4119E-09
O	1.9553E-03	2.2283E-02	3.4167E-02
O+	1.3036E-17	4.3233E-13	2.3915E-12
O++	2.0951E-71	3.3069E-55	2.5222E-52
O-	1.5089E-14	1.2402E-10	4.7991E-10
O2	4.6172E-02	1.3487E-01	1.5433E-01
O2+	1.2928E-12	1.3326E-09	4.1087E-09
O2-	1.1284E-13	3.9497E-10	1.2458E-09
C	4.7857E-15	7.9502E-11	3.7692E-10
C+	3.2968E-25	8.8950E-18	9.9033E-17
C++	3.7658E-58	5.7873E-45	1.4492E-42
C-	5.2289E-27	2.1439E-19	2.6615E-18
CO	9.3462E-02	2.9129E-01	3.4211E-01
CO+	4.6675E-16	5.8112E-12	2.6465E-11
CO2	8.5841E-01	5.5156E-01	4.6939E-01
C2	3.0483E-23	1.3060E-16	1.2064E-15

SPECIES	MOLE FRACTIONS		
E-	6.8836E-12	3.1196E-09	8.5324E-09
O	4.3922E-03	3.8438E-02	5.6452E-02
O+	2.1219E-16	3.5711E-12	1.7620E-11
O++	1.5003E-67	1.4123E-51	6.3611E-49
O-	1.4253E-13	6.3470E-10	2.1868E-09
O2	6.7638E-02	1.5927E-01	1.7394E-01
O2+	7.7840E-12	5.2442E-09	1.4841E-08
O2-	7.6314E-13	1.5303E-09	4.2901E-09
C	5.8679E-14	5.3470E-10	2.2882E-09
C+	8.9295E-23	1.7470E-16	1.6419E-15
C++	4.7302E-55	6.0528E-42	9.3433E-40
C-	4.0808E-25	4.5840E-18	4.6309E-17
CO	1.3885E-01	3.5627E-01	4.0365E-01
CO+	5.0934E-15	3.6812E-11	1.5170E-10
CO2	7.8912E-01	4.4603E-01	3.6296E-01
C2	1.7002E-21	1.9263E-15	1.5124E-14

P1 = 2.00E+03 N/SQ-M, US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4878E+02	1.8964E+03	2.3967E+03
T	9.2326E+00	1.2521E+01	1.3246E+01
RHO	1.4534E+01	1.1545E+02	1.3184E+02
H	4.8631E-01	4.5982E-02	-7.2200E-02
A	2.9634E+00	3.8022E+00	4.0152E+00
S	1.3946E+00	1.5028E+00	1.5350E+00
Z	1.1088E+00	1.3119E+00	1.3725E+00
GAME	8.5703E-01	8.8011E-01	8.8672E-01
U	1.0337E+01	1.3032E+00	1.2829E+00

P1 = 2.00E+03 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6981E+02	2.2936E+03	2.8893E+03
T	9.6623E+00	1.3307E+01	1.4127E+01
RHO	1.5354E+01	1.2460E+02	1.4082E+02
H	4.1524E-01	-9.0058E-02	-2.2355E-01
A	3.0825E+00	4.0418E+00	4.2862E+00
S	1.4286E+00	1.5488E+00	1.5882E+00
Z	1.1445E+00	1.3834E+00	1.4524E+00
GAME	8.5918E-01	8.8743E-01	8.9543E-01
U	1.1069E+01	1.3661E+00	1.3555E+00

SPECIES	MOLE FRACTIONS		
E-	2.9421E-11	1.0211E-08	2.7326E-08
O	8.3436E-03	6.1549E-02	8.7734E-02
O+	2.0806E-15	2.2788E-11	1.1323E-10
O++	2.8346E-66	7.4897E-49	9.7477E-46
O-	8.8103E-13	2.6183E-09	8.5443E-09
O2	9.0101E-02	1.7651E-01	1.8401E-01
O2+	3.3819E-11	1.7474E-08	4.7523E-08
O2-	3.5558E-12	4.8551E-09	1.2532E-08
C	4.5705E-13	2.8737E-09	1.2252E-08
C+	3.2477E-21	2.2606E-15	2.3068E-14
C++	9.5327E-54	1.2500E-39	4.1847E-37
C-	1.9861E-23	6.2266E-17	6.4738E-16
CO	1.8780E-01	4.1390E-01	4.5511E-01
CO+	3.6230E-14	1.8797E-10	7.6623E-10
CO2	7.1370E-01	3.4804E-01	2.7315E-01
C2	3.8000E-20	1.9794E-14	1.5857E-13

SPECIES	MOLE FRACTIONS		
E-	9.9367E-11	3.0566E-08	8.0382E-08
O	1.4340E-02	9.3023E-02	1.2931E-01
O+	1.3342E-14	1.3103E-10	6.3526E-10
O++	6.8198E-63	1.0302E-46	3.3892E-43
O-	3.9563E-12	9.3980E-09	2.9039E-08
O2	1.1228E-01	1.8443E-01	1.8246E-01
O2+	1.1579E-10	5.2168E-08	1.3686E-07
O2-	1.2661E-11	1.3197E-08	3.1539E-08
C	2.4800E-12	1.3951E-08	5.8651E-08
C+	4.3391E-20	2.6791E-14	2.6457E-13
C++	5.1018E-51	2.2799E-37	6.7854E-35
C-	3.0280E-22	7.3505E-16	7.1352E-15
CO	2.3818E-01	4.6125E-01	4.9363E-01
CO+	1.8386E-13	8.6198E-10	3.4620E-09
CO2	6.3515E-01	2.6129E-01	1.9459E-01
C2	4.0309E-19	1.7941E-13	1.3884E-12

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = -2.00E+03 N/SQ-M, US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9219E+02	2.7269E+03	3.4321E+03
T	1.0078E+01	1.4141E+01	1.5085E+01
RHO	1.6103E+01	1.3208E+02	1.4792E+02
H	3.3960E-01	-2.3473E-01	-3.8566E-01
A	3.2061E+00	4.3005E+00	4.5835E+00
S	1.4634E+00	1.5952E+00	1.6372E+00
Z	1.1841E+00	1.4600E+00	1.5381E+00
GAME	8.6131E-01	8.9577E-01	9.0545E-01
U	1.1799E+01	1.4407E+00	1.4414E+00

SPECIES	MOLE FRACTIONS		
E-	2.8584E-10	8.5005E-08	2.2376E-07
O	2.2855E-02	1.3376E-01	1.8147E-01
O+	6.6181E-14	6.8901E-10	3.4013E-09
O++	3.3068E-60	5.9216E-43	3.9157E-40
-	1.4349E-11	2.9783E-08	8.8379E-08
O2	1.3303E-01	1.8162E-01	1.6865E-01
O2+	3.3676E-10	1.4159E-07	3.6275E-07
O2-	3.7385E-11	3.1138E-08	6.8919E-08
C	1.0691E-11	6.2550E-08	2.7100E-07
C+	3.6948E-19	2.9614E-13	3.1050E-12
C++	7.5286E-49	9.9492E-35	2.2920E-32
C-	2.9812E-21	7.6030E-15	7.4389E-14
CO	2.8817E-01	4.9640E-01	5.1821E-01
CO+	7.5053E-13	3.6468E-09	1.4903E-08
CO2	5.5595E-01	1.8822E-01	1.3166E-01
C2	3.0022E-18	1.4673E-12	1.1820E-11

P1 = 2.00E+03 N/SQ-M, US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1591E+02	3.1915E+03	4.0218E+03
T	1.0489E+01	1.5036E+01	1.6147E+01
RHO	1.6771E+01	1.3771E+02	1.5290E+02
H	2.5940E-01	-3.8791E-01	-5.5942E-01
A	3.3352E+00	4.5802E+00	4.9117E+00
S	1.4991E+00	1.6417E+00	1.6804E+00
Z	1.2273E+00	1.5413E+00	1.6290E+00
GAME	8.6404E-01	9.0519E-01	9.1720E-01
U	1.2526E+01	1.5276E+00	1.5417E+00

SPECIES	MOLE FRACTIONS		
E-	7.3640E-10	2.2125E-07	5.9355E-07
O	3.4314E-02	1.8362E-01	2.4269E-01
O+	2.7692E-13	3.2901E-09	1.7206E-08
O++	2.6314E-57	1.1207E-40	2.9394E-37
-	4.4988E-11	8.3957E-08	2.4136E-07
O2	1.5128E-01	1.6785E-01	1.4369E-01
O2+	8.7535E-10	3.5186E-07	8.8635E-07
O2-	9.6497E-11	6.4188E-08	1.3059E-07
C	3.9579E-11	2.6083E-07	1.2163E-06
C+	2.6139E-18	2.8779E-12	3.5559E-11
C++	9.3486E-47	1.2139E-32	6.3237E-30
C-	2.1601E-20	6.6480E-14	7.0870E-13
CO	3.3615E-01	5.1874E-01	5.2954E-01
CO+	2.6569E-12	1.4247E-08	6.1906E-08
CO2	4.7825E-01	1.2979E-01	8.4077E-02
C2	1.7613E-17	1.0699E-11	9.7439E-11

P1 = 2.00E+03 N/SQ-M, US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4096E+02	3.6816E+03	4.6540E+03
T	1.0902E+01	1.6012E+01	1.7361E+01
RHO	1.7350E+01	1.4137E+02	1.5556E+02
H	1.7463E-01	-5.4949E-01	-7.4473E-01
A	3.4707E+00	4.8843E+00	5.2805E+00
S	1.5350E+00	1.6881E+00	1.7355E+00
Z	1.2740E+00	1.6244E+00	1.7235E+00
GAME	8.6728E-01	9.1606E-01	9.3188E-01
U	1.3250E+01	1.6282E+00	1.6592E+00

SPECIES	MOLE FRACTIONS		
E-	1.7665E-09	5.4883E-07	1.5405E-06
O	4.9339E-02	2.4099E-01	3.0953E-01
O+	1.0770E-12	1.4978E-08	8.4918E-08
O++	1.7328E-54	1.3013E-37	1.3334E-34
-	1.2797E-10	2.1351E-07	6.0176E-07
O2	1.6605E-01	1.4443E-01	1.1052E-01
O2+	2.1093E-09	8.0929E-07	2.0127E-06
O2-	2.2467E-10	1.1578E-07	2.1430E-07
C	1.3542E-10	1.0592E-06	5.6416E-06
C+	1.6575E-17	2.8348E-11	4.2180E-10
C++	2.4696E-44	3.3186E-30	1.3774E-27
C-	1.4494E-19	5.4576E-13	6.5640E-12
CO	3.8075E-01	5.2931E-01	5.3005E-01
CO+	8.6888E-12	5.3823E-08	2.5854E-07
CO2	4.0386E-01	8.5269E-02	4.9895E-02
C2	9.5115E-17	7.6699E-11	8.3472E-10

P1 = 2.00E+03 N/SQ-M, US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6732E+02	4.1906E+03	5.3314E+03
T	1.1321E+01	1.7100E+01	1.8850E+01
RHO	1.7830E+01	1.4299E+02	1.5551E+02
H	8.5301E-02	-7.1933E-01	-9.4383E-01
A	3.6131E+00	5.2185E+00	5.7141E+00
S	1.5727E+00	1.7340E+00	1.7846E+00
Z	1.3239E+00	1.7138E+00	1.8187E+00
GAME	8.7100E-01	9.2924E-01	9.5239E-01
U	1.3971E+01	1.7450E+00	1.8046E+00

SPECIES	MOLE FRACTIONS		
E-	4.0210E-09	1.3193E-06	4.2035E-06
O	6.8505E-02	3.0266E-01	3.7709E-01
O+	1.1374E-12	6.5641E-08	4.4705E-07
O++	1.7206E-53	5.7986E-35	1.9754E-31
-	3.3746E-10	4.9534E-07	1.4339E-06
O2	1.7646E-01	1.1410E-01	7.3309E-02
O2+	4.8058E-09	1.7304E-06	4.2901E-06
O2-	4.7878E-10	1.8288E-07	3.0533E-07
C	4.4756E-10	4.3567E-06	3.0381E-05
C+	1.2427E-16	2.8206E-10	6.5136E-09
C++	3.1004E-43	6.3069E-28	7.6643E-25
C-	1.0490E-18	4.2641E-12	7.1822E-11
CO	4.2076E-01	5.3035E-01	5.2317E-01
CO+	2.7275E-11	2.0122E-07	1.1931E-06
CO2	3.3427E-01	5.2877E-02	2.6363E-02
C2	5.2421E-16	5.5672E-10	9.1354E-09

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9500E+02	4.7107E+03	6.0498E+03
T	1.1752E+01	1.8375F+01	2.0883E+01
RHO	1.8231E+01	1.4236E+02	1.5204E+02
H	-8.5920E+03	-8.9723F-01	-1.1581E+00
A	3.7632E+00	5.5970F+00	6.2528E+00
S	1.6105E+00	1.7791F+00	1.8327E+00
Z	1.3769E+00	1.8009F+00	1.9054E+00
GAME	8.7518E-01	9.4667F-01	9.8200E-01
U	1.4688E+01	1.8835F+00	1.9997E+00

SPECIES	MOLF FRACTIONS	
E-	8.6533E-09	3.2151E-06
O	9.2344E-02	3.6455E-01
O+	1.4338E-11	2.9083E-07
O++	3.1977E-01	2.3805E-32
U-	8.1836E-10	1.0813F-06
O2	1.8173E-01	8.0409F-02
O2+	1.0319E-08	3.4696E-06
O2-	9.4062E-10	2.5391E-07
C	1.3627E-09	1.9310E-05
C+	7.3322E-16	3.1463E-09
C++	2.2383E-41	1.2771E-25
C-	5.9835E-18	3.5162F-11
CO	4.5516E-01	5.2484F-01
CO+	7.9441E-11	7.8678F-07
CO2	2.7077E-01	3.0172F-02
C2	2.4601E-15	4.5553E-09

P1 = 2.00E+03 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5423E+02	5.7380E+03	7.5788E+03
T	1.2662E+01	2.2187E+01	2.6580E+01
RHO	1.8748E+01	1.3297E+02	1.4166E+02
H	-2.1005E-01	-1.2757E+00	-1.6289E+00
A	4.0889E+00	6.5630F+00	7.1112E+00
S	1.6872E+00	1.8645E+00	1.9209E+00
Z	1.4921E+00	1.9449E+00	2.0128E+00
GAME	8.8491E-01	9.9815E-01	9.4523E-01
U	1.6113E+01	2.2746E+00	2.4572E+00

SPECIES	MOLF FRACTIONS	
E-	3.5388E-08	2.9974F-05
O	1.5533E-01	4.6322F-01
O+	1.4596E-10	7.1277E-06
O++	2.6853E-47	2.8364E-26
O-	3.9521E-09	5.6616E-06
O2	1.7479E-01	2.2798F-02
O2+	4.1529E-08	1.0359F-05
O2-	2.9249E-09	3.6356E-07
C	1.1002E-08	7.8715F-04
C+	2.0295E-14	1.0388E-06
C++	4.2689E-38	4.1338E-20
C-	1.4350E-16	6.3056E-09
CO	5.0432E-01	5.0680F-01
CO+	5.9010E-10	1.7479E-05
CO2	1.6556E-01	6.3283E-03
C2	4.3699E-14	9.2672F-07

P1 = 2.00E+03 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2398E+02	5.2310E+03	6.8125E+03
T	1.2197E+01	1.9987E+01	2.3815E+01
RHO	1.8534E+01	1.3910F+02	1.4534E+02
H	-1.0704E-01	-1.0828E+00	-1.3904E+00
A	3.9216E+00	6.0444F+00	6.8201E+00
S	1.6486E+00	1.8229F+00	1.8791E+00
Z	1.4331E+00	1.8816E+00	1.9675E+00
GAME	8.7981E-01	9.7146E-01	9.9443E-01
U	1.5403E+01	2.0549F+00	2.2469E+00

SPECIES	MOLF FRACTIONS	
E-	1.7811E-08	8.6941E-06
O	1.2125E-01	4.2079E-01
O+	4.6639E-11	1.3910E-06
O++	3.5469E-49	2.0695E-29
O-	1.8521E-09	2.3553E-06
O2	1.8126E-01	4.7948F-02
O2+	2.1114E-08	6.4528E-06
O2-	1.7174E-09	3.1355E-07
C	3.9336E-09	1.0524F-04
C+	3.9428E-15	4.7521F-08
C++	1.1051E-39	5.4209E-23
C-	3.0372E-17	3.7404E-10
CO	4.8315E-01	5.1602E-01
CO+	2.1992E-10	3.4720E-06
CO2	2.1435E-01	1.5111E-02
C2	1.0610E-14	5.1278F-08

P1 = 2.00E+03 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8577E+02	6.2346E+03	8.3181E+03
T	1.3152E+01	2.4823F+01	2.8390E+01
RHO	1.8875E+01	1.2643E+02	1.4189E+02
H	-3.1761E-01	-1.4759E+00	-1.8660E+00
A	4.2662E+00	6.9386F+00	7.3459E+00
S	1.7261E+00	1.9032F+00	1.9591E+00
Z	1.5540E+00	1.9866E+00	2.0650E+00
GAME	8.9055E-01	9.7629E-01	9.2046E-01
U	1.6820E+01	2.5146F+00	2.5813E+00

SPECIES	MOLF FRACTIONS	
E-	6.8262E-08	1.1794E-04
O	1.4431E-01	4.8657E-01
O+	4.4637E-10	2.8766F-05
O++	1.8343E-45	2.4450E-23
O-	7.9868E-09	1.4498E-05
O2	1.6248E-01	1.0113E-02
O2+	7.8895E-08	1.2912F-05
O2-	4.6475E-09	4.4012E-07
C	3.0287E-08	5.7967E-03
C+	1.0377E-13	1.8771E-05
C++	1.5913E-36	2.1711F-17
C-	6.5003E-16	1.1706F-07
CO	5.1870E-01	4.9452E-01
CO+	1.5543E-09	7.2543E-05
CO2	1.2451E-01	2.5834E-03
C2	1.7675E-13	1.6706F-05

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_1 = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1855E+02	6.7522E+03	9.0375E+03
T	1.3672E+01	2.6934E+01	2.9748E+01
RHO	1.8916E+01	1.2364E+02	1.4314E+02
M	-4.2972E-01	-1.6854E+00	-2.1072E+00
A	4.4549E+00	7.1439E+00	7.5906E+00
S	1.765UE+00	1.9397E+00	1.9963E+00
Z	1.6184E+00	2.0277E+00	2.1241E+00
GAME	8.9692E-01	9.3449E-01	9.1244E-01
U	1.7523E+01	2.6853E+00	2.6685E+00

SPECIES	MOLE FRACTIONS		
E-	1.2854E-07	3.1959E-04	9.0269E-04
O	2.3747E-01	5.0071E-01	5.2455E-01
O+	1.3498E-09	6.5126E-05	1.4540E-04
O++	1.5520E-43	1.4729E-21	1.4245E-19
O-	1.5338E-08	2.9620E-05	7.4365E-05
O2	1.4491E-01	6.0116E-03	4.2624E-03
O2+	1.4530E-07	1.3733E-05	1.6512E-05
O2-	6.8825E-09	5.6167E-07	1.0436E-06
C	8.3306E-08	2.0568E-02	6.1625E-02
C+	5.4221E-13	1.0853E-04	4.9504E-04
C++	6.9505E-35	1.0269E-15	4.2461E-14
C-	2.8747E-15	8.4145E-07	6.1749E-06
CO	5.2675E-01	4.7049E-01	4.0626E-01
CO+	4.1091E-09	1.6322E-04	3.2733E-04
CO2	9.0871E-02	1.4124E-03	8.2130E-04
C2	7.1921E-13	1.0374E-04	5.1916E-04

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8775E+02	7.8032E+03	1.0377E+04
T	1.4803E+01	2.9609E+01	3.1863E+01
RHO	1.8724E+01	1.2345E+02	1.4461E+02
M	-6.6753E-01	-2.1311E+00	-2.6113E+00
A	4.8790E+00	7.5875E+00	8.0928E+00
S	1.8429E+00	2.0110E+00	2.0707E+00
Z	1.7527E+00	2.1349E+00	2.2505E+00
GAME	9.1384E-01	9.1077E-01	9.1095E-01
U	1.8914E+01	2.8738E+00	2.8130E+00

SPECIES	MOLE FRACTIONS		
E-	4.4088E-07	9.5264E-04	1.8205E-03
O	3.3149E-01	5.2731E-01	5.5254E-01
O+	1.2744E-08	1.4787E-04	2.5802E-04
O++	1.4689E-39	1.3078E-19	2.7610E-18
O-	4.9637E-08	6.9367E-05	1.3332E-04
O2	9.8204E-02	3.8264E-03	3.3937E-03
O2+	4.5925E-07	1.5127E-05	1.9157E-05
O2-	1.2098E-08	8.6614E-07	1.5011E-06
C	6.8616E-07	6.5719E-02	1.1335E-01
C+	1.7853E-11	5.4118E-04	1.2300E-03
C++	1.9428E-31	4.4284E-14	4.5330E-13
C-	5.7825E-14	6.1054E-06	1.9597E-05
CO	5.2740E-01	3.9983E-01	3.2513E-01
CO+	3.0544E-08	3.2480E-04	4.6774E-04
CO2	4.2699E-02	7.2205E-04	4.9460E-04
C2	1.3789E-11	5.2750E-04	1.1429E-03

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_1 = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5256E+02	7.2833E+03	9.7346E+03
T	1.4235E+01	2.8431E+01	3.0851E+01
RHO	1.8868E+01	1.2328E+02	1.4419E+02
M	-5.4636E-01	-1.9041E+00	-2.3554E+00
A	4.6575E+00	7.3601E+00	7.8396E+00
S	1.8040E+00	1.9754E+00	2.0344E+00
Z	1.6849E+00	2.0780E+00	2.1884E+00
GAME	9.0441E-01	9.1696E-01	9.1035E-01
U	1.8221E+01	2.7935E+00	2.7431E

SPECIES	MOLE FRACTIONS		
E-	2.3826E-07	6.0510E-04	1.3265E-03
O	2.8369E-01	5.1393E-01	5.3467E-01
O+	4.0977E-09	1.0502E-04	1.9746E-04
O++	1.5516E-41	2.1245E-20	7.0657E-19
O-	2.8121E-08	4.8253E-05	1.0233E-04
O2	1.2306E-01	4.5450E-03	3.7474E-03
O2+	2.6077E-07	1.4344E-05	1.7730E-05
O2-	9.4788E-09	7.0806E-07	1.2697E-06
C	2.3364E-07	4.1860E-02	8.7478E-02
C+	2.9840E-12	2.8762E-04	8.2462E-04
C++	3.5892E-33	9.5853E-15	1.5247E-13
C-	1.2701E-14	2.7513E-06	1.1833E-05
CO	5.2929E-01	4.3710E-01	3.6576E-01
CO+	1.0986E-08	2.4983E-04	4.0210E-04
CO2	6.3956E-02	9.6394E-04	6.3179E-04
C2	3.0342E-12	2.8398E-04	8.2722E-04

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_1 = 5.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2406E+02	8.2858E+03	1.0999E+04
T	1.5594E+01	3.0617E+01	3.2813E+01
RHO	1.8462E+01	1.2321E+02	1.4401E+02
M	-7.9319E-01	-2.3655E+00	-2.8748E+00
A	5.1289E+00	7.8192E+00	8.3514E+00
S	1.8814E+00	2.0470E+00	2.1086E+00
Z	1.8203E+00	2.1965E+00	2.3276E+00
GAME	9.2671E-01	9.0914E-01	9.1311E-01
U	1.9599E+01	2.9419E+00	2.8819E+00

SPECIES	MOLE FRACTIONS		
E-	8.3461E-07	1.3589E-03	2.3970E-03
O	3.7902E-01	5.4068E-01	5.6600E-01
O+	4.1830E-08	1.9573E-04	3.3032E-04
O++	4.2223E-38	5.6551E-19	9.3447E-18
O-	8.5574E-08	9.2650E-05	1.6722E-04
O2	7.1875E-02	3.3840E-03	3.1129E-03
O2+	8.0066E-07	1.6069E-05	2.0690E-05
O2-	1.4414E-08	1.0276E-06	1.7273E-06
C	2.2110E-06	9.0380E-02	1.3675E-01
C+	1.1938E-10	8.6201E-04	1.7195E-03
C++	6.2440E-30	1.4504E-13	1.1537E-12
C-	2.8312E-13	1.1012E-05	2.9530E-05
CO	5.2228E-01	3.6127E-01	2.8512E-01
CO+	9.1788E-08	3.8979E-04	5.2498E-04
CO2	2.6822E-02	5.6162E-04	3.8774E-04
C2	7.0574E-11	8.0009E-04	1.4376E-03

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1= 5.80E+03 M/SEC

P1 = 2.00E+03 N/SQ-M, US1= 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.6132E+02	8.6939E+03	1.1499E+04
T	1.6508E+01	3.1521E+01	3.3729E+01
RHD	1.8041E+01	1.2196E+02	1.4195E+02
H	-9.2329E-01	-2.6064E+00	-3.1452E+00
A	5.4264E+00	8.0530E+00	8.6159E+00
S	1.9191E+00	2.0835E+00	2.1472E+00
Z	1.8848E+00	2.2615E+00	2.4017E+00
GAME	4.4653E-01	9.0973E-01	9.1640E-01
U	2.0271E+01	3.0039E+03	2.9514E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9430E+02	8.9621E+03	1.1813E+04
T	1.7777E+01	3.2346E+01	3.4621E+01
RHD	1.7375E+01	1.1895E+02	1.3770E+02
H	-1.0577E+00	-2.8519E+00	-3.4220E+00
A	5.8117E+00	8.2873E+00	8.8873E+00
S	1.9557E+00	2.1211E+00	2.1870E+00
Z	1.9403E+00	2.3293E+00	2.4779E+00
GAME	9.7922E-01	9.1157E-01	9.2068E-01
U	2.0924E+01	3.0614E+00	3.0269E+00

SPECIES	MOLE FRACTIONS		
E-	1.7173E-06	1.8276E-03	3.0740E-03
O	4.2350E-01	5.5381E-01	5.7692E-01
O+	1.5960E-07	2.5058E-04	4.1621E-04
O++	4.0007E-35	1.9529E-18	2.8940E-17
O-	1.4894E-07	1.1765E-04	2.0340E-04
O2	4.6165E-02	3.0618E-03	2.8611E-03
O2+	1.3928E-06	1.7100E-05	2.2322E-05
O2-	1.5248E-08	1.1815E-06	1.9311E-06
C	8.0776E-06	1.1500E-01	1.6333E-01
C+	1.2078E-09	1.2504E-03	2.3069E-03
C++	1.8734E-27	3.8703E-13	2.6975E-12
C-	1.0343E-12	1.7469E-05	4.1554E-05
CO	5.1534E-01	3.2268E-01	2.4620E-01
CO+	3.2746E-07	4.4584E-04	7.7357E-04
CO2	1.4983E-02	4.4239E-04	3.0025E-04
C2	5.1624E-10	1.0723E-03	1.6662E-03

SPECIES	MOLE FRACTIONS		
E-	4.3408E-06	2.3663E-03	3.8603E-03
O	4.6096E-01	5.6655E-01	5.9120E-01
O+	7.5128E-07	3.1421E-04	5.2665E-04
O++	2.0060E-32	5.8735E-18	8.4360E-17
O-	2.8393E-07	1.4335E-04	2.4007E-04
O2	2.3889E-02	2.7874E-03	2.6103E-03
O2+	2.3676E-06	1.8111E-05	2.3933E-05
O2-	1.5083E-08	1.3091E-06	2.0840E-06
C	5.1418E-05	1.3909E-01	1.8692E-01
C+	2.0276E-08	1.7113E-03	3.0158E-03
C++	8.0319E-23	7.0914E-13	5.9609E-12
C-	1.9187E-11	2.5287E-05	5.5361E-05
CO	5.0818E-01	2.8483E-01	2.0082E-01
CO+	1.5066E-06	4.9267E-04	6.1203E-04
CO2	6.9084E-03	3.4688E-04	2.2687E-04
C2	6.4509E-09	1.3167E-03	1.8657E-03

P1 = 2.00E+03 N/SQ-M, US1= 6.20E+03 M/SEC

P1 = 2.00E+03 N/SQ-M, US1= 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3763E+02	9.0482E+03	1.1882E+04
T	1.9609E+01	3.3104E+01	3.5485E+01
RHD	1.6446E+01	1.1394E+02	1.3107E+02
H	-1.1963E+00	-3.0998E+00	-3.6990E+00
A	6.2698E+00	8.5207E+00	9.1617E+00
S	1.9899E+00	2.1596E+00	2.2275E+00
Z	1.9772E+00	2.3988E+00	2.5546E+00
GAME	1.0139E+00	9.1428E-01	9.2593E-01
U	2.1346E+01	3.1148E+00	3.0952E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7681E+02	9.1070E+03	1.1921E+04
T	2.1764E+01	3.3861E+01	3.6411E+01
RHD	1.5557E+01	1.0889E+02	1.2437E+02
H	-1.3393E+00	-3.3535E+00	-3.9836E+00
A	6.5351E+00	8.7620E+00	9.4548E+00
S	2.0220E+00	2.1983E+00	2.2682E+00
Z	1.9991E+00	2.4700E+00	2.6324E+00
GAME	9.8160E-01	9.1791E-01	9.3263E-01
U	2.2159E+01	3.1711E+00	3.1677E+00

SPECIES	MOLE FRACTIONS		
E-	1.5984E-05	2.9844E-03	4.8392E-03
O	4.8496E-01	5.7872E-01	6.0253E-01
O+	4.1022E-06	3.8836E-04	6.6103E-04
O++	6.0978E-29	1.5748E-17	2.3258E-16
O-	6.7490E-07	1.6852E-04	2.7721E-04
O2	9.4790E-03	2.5308E-03	2.3514E-03
O2+	3.4708E-06	1.9013E-05	2.5305E-05
O2-	1.5096E-08	1.3940E-06	2.1611E-06
C	4.7355E-04	1.6228E-01	2.0892E-01
C+	5.9700E-07	2.2516E-03	3.8041E-03
C++	1.1298E-21	1.9405E-12	1.2590E-11
C-	4.1503E-10	3.4093E-05	7.0143E-05
CO	5.0252E-01	2.4831E-01	1.7370E-01
CO+	8.4966E-06	5.2944E-04	6.3819E-04
CO2	2.3317E-03	2.6832E-04	1.6632E-04
C2	1.0027E-07	1.5110E-03	1.9565E-03

SPECIES	MOLE FRACTIONS		
E-	6.9008E-05	3.7104E-03	6.0351E-03
O	4.9620E-01	5.9028E-01	6.1294E-01
O+	1.6886E-05	4.7888E-04	8.3069E-04
O++	7.2308E-26	4.1067E-17	6.6449E-16
O-	1.8209E-06	1.9502E-04	3.1044E-04
O2	3.7023E-03	2.2992E-03	2.0986E-03
O2+	3.9368E-06	2.0000E-05	2.7009E-05
O2-	1.7371E-08	1.4632E-06	2.2060E-06
C	4.1081E-03	1.8452E-01	2.2946E-01
C+	1.3021E-05	2.8930E-03	4.9193E-03
C++	8.0038E-19	3.9901E-12	2.6896E-11
C-	9.8210E-09	4.4154E-05	8.6702E-05
CO	4.9490E-01	2.1315E-01	1.4051E-01
CO+	3.7092E-05	5.5919E-04	6.5560E-04
CO2	9.3877E-04	2.0474E-04	1.1762E-04
C2	3.6961E-06	1.6548E-03	1.9601E-03

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1 = 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1657E+02	9.4518E+03	1.2350E+04
T	2.3555E+01	3.4741E+01	3.7503E+01
RHD	1.5191E+01	1.0695E+02	1.2130E+02
M	-1.4073E+00	-3.6227E+00	-4.2901E+00
A	6.6549E+00	9.0314E+00	9.7944E+00
S	2.0519E+00	2.2359E+00	2.3075E+00
Z	2.0256E+00	2.5439E+00	2.7117E+00
GAME	9.3003E+01	9.2295E+01	9.4179E+01
U	2.2814E+01	3.2453E+00	3.2618E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.9103E-04	4.6062E-03	7.6262E-03
O	5.0420E-01	6.0126E-01	6.2231E-01
O+	3.6114E-05	5.9999E-04	1.0997E-03
O++	4.4501E-24	1.1720E-15	2.2422E-15
O-	3.7924E-00	2.2924E-04	3.6934E-04
O2	2.1208E-03	2.1153E-03	1.8703E-03
O2+	3.0707E-06	2.1579E-05	2.9589E-05
O2-	2.1915E-08	1.5851E-06	2.3202E-06
C	1.4733E-02	2.0598E-01	2.4040E-01
C+	7.4575E-05	3.6838E-03	6.3060E-03
C++	3.5935E-17	8.5162E-12	6.2949E-11
C-	7.4998E-08	5.7118E-05	1.0046E-04
CO	4.7770E-01	1.7893E-01	1.0942E-01
CO+	8.0361E-05	5.8873E-04	6.7131E-04
CO2	5.0742E-04	1.5483E-04	8.0039E-05
C2	2.4003E-05	1.7668E-03	1.9210E-03

P1 = 2.00E+03 N/SQ-M, US1 = 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0837E+02	1.0669E+04	1.3993E+04
T	2.5244E+01	3.6902E+01	4.0862E+01
RHD	1.5242E+01	1.0723E+02	1.1909E+02
M	-1.7980E+00	-4.2012E+00	-4.9707E+00
A	6.9072E+00	9.6622E+00	1.0680E+01
S	2.1098E+00	2.3090E+00	2.3865E+00
Z	2.1009E+00	2.6964E+00	2.8741E+00
GAME	8.9960E+01	9.3828E+01	9.7081E+01
U	2.4202E+01	3.4453E+00	3.5511E+00

SPECIES ----- MOLE FRACTIONS -----

E-	5.6854E-04	7.1964E-03	1.3355E-02
O	5.2237E-01	6.2079E-01	6.3023E-01
O+	7.3341E-05	9.9916E-04	2.2168E-03
O++	2.5752E-22	1.2570E-15	5.2110E-14
O-	8.9670E-06	3.2333E-04	5.2080E-04
O2	1.3143E-03	1.7836E-03	1.4038E-03
O2+	3.8139E-00	2.6391E-05	3.8222E-05
O2-	3.3500E-08	1.9107E-06	2.5750E-06
C	4.8548E-02	2.4508E-01	2.7938E-01
C+	3.5026E-04	5.9517E-03	1.1126E-02
C++	1.2680E-15	4.4506E-11	5.3329E-10
C-	5.6705E-07	9.3677E-05	1.7240E-04
CO	4.2621E-01	1.1521E-01	5.3286E-02
CO+	1.5069E-04	6.3802E-04	6.7700E-04
CO2	2.6914E-04	8.0763E-05	2.8046E-05
C2	1.2850E-04	1.8276E-03	1.5255E-03

P1 = 2.00E+03 N/SQ-M, US1 = 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6257E+02	1.0008E+04	1.3095E+04
T	2.4427E+01	3.5753E+01	3.9049E+01
RHD	1.5150E+01	1.0685E+02	1.2000E+02
M	-1.6403E+00	-3.9064E+00	-4.6213E+00
A	6.7028E+00	9.3313E+00	1.0206E+01
S	2.0810E+00	2.2726E+00	2.3475E+00
Z	2.0606E+00	2.6197E+00	2.7944E+00
GAME	9.0866E+01	9.2963E+01	9.5461E+01
U	2.3500E+01	3.3372E+00	3.3953E+00

SPECIES ----- MOLE FRACTIONS -----

E-	5.0250E-04	5.7368E-03	9.9491E-03
O	5.1298E-01	6.1153E-01	6.3049E-01
O+	5.4936E-05	7.6616E-04	1.5227E-03
O++	4.8633E-23	3.6738E-16	9.7298E-15
O-	0.2182E-06	2.7208E-04	4.4000E-04
O2	1.5755E-03	1.9510E-03	1.6468E-03
O2+	3.8018E-06	2.3733E-05	3.3355E-05
O2-	2.7447E-08	1.7440E-06	2.4638E-06
C	3.0708E-02	2.2633E-01	2.6584E-01
C+	1.9155E-04	4.6781E-03	8.2925E-03
C++	3.0340E-10	1.9017E-11	1.7188E-10
C-	2.5107E-07	7.3566E-05	1.3730E-04
CO	4.5358E-01	1.4608E-01	7.9124E-02
CO+	1.1877E-04	6.1618E-04	6.8093E-04
CO2	3.5050E-04	1.1423E-04	4.9805E-05
C2	6.7430E-05	1.8312E-03	1.7807E-03

P1 = 2.00E+03 N/SQ-M, US1 = 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5574E+02	1.1391E+04	1.5000E+04
T	2.5927E+01	3.8220E+01	4.3207E+01
RHD	1.5390E+01	1.0750E+02	1.1771E+02
M	-1.9604E+00	-4.5055E+00	-5.3393E+00
A	7.0573E+00	1.0030E+01	1.1221E+01
S	2.1366E+00	2.3450E+00	2.4257E+00
Z	2.1447E+00	2.7724E+00	2.9494E+00
GAME	8.9572E+01	9.4940E+01	9.8812E+01
U	2.4910E+01	3.5713E+00	3.7403E+00

SPECIES ----- MOLE FRACTIONS -----

E-	0.0459E-04	9.1452E-03	1.8009E-02
O	5.3206E-01	6.2871E-01	6.3839E-01
O+	9.2354E-05	1.3387E-03	3.4472E-03
O++	9.4750E-22	4.7711E-15	3.6552E-13
O-	1.2031E-05	3.8385E-04	6.3657E-04
O2	1.1619E-03	1.6024E-03	1.1439E-03
O2+	3.8915E-06	2.9599E-05	4.4597E-05
O2-	4.0012E-08	2.0636E-06	2.6072E-06
C	6.7280E-02	2.6166E-01	2.8759E-01
C+	5.4355E-04	7.6291E-03	1.5174E-02
C++	3.7454E-15	1.1079E-10	1.9591E-09
C-	1.0423E-06	1.1777E-04	2.1572E-04
CO	3.9745E-01	8.6932E-02	3.2509E-02
CO+	1.7791E-04	6.5142E-04	6.5028E-04
CO2	2.1753E-04	5.3728E-05	1.3062E-05
C2	2.0159E-04	1.7435E-03	1.2434E-03

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1= 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.0456E+02	1.2148E+04	1.6090E+04
T	2.6535E+01	3.9769E+01	4.5954E+01
RHO	1.5559E+01	1.0733E+02	1.1614E+02
H	-2.1274E+00	-4.8186E+00	-5.7262E+00
A	7.2104E+00	1.0442E+01	1.1761E+01
S	2.1676E+00	2.3805E+00	2.4632E+00
Z	2.1910E+00	2.8462E+00	3.0152E+00
GAME	8.9422E-01	9.6336E-01	9.9834E-01
U	2.5021E+01	3.7193E+00	3.9596E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0706E-03	1.1854E-02	2.6479E-02
O	5.4182E-01	6.3477E-01	6.3569E-01
O+	1.1284E-04	1.8585E-03	5.5339E-03
O++	2.9012E-21	2.0951E-14	2.8950E-12
O-	1.5432E-05	4.5497E-04	7.5509E-04
O2	1.0595E-03	1.4034E-03	9.0364E-04
O2+	4.0178E-06	3.3477E-05	5.2348E-05
O2-	4.6980E-08	2.1804E-06	2.5454E-06
C	8.6314E-02	2.7529E-01	2.8872E-01
C+	7.6908E-04	9.9121E-03	2.1489E-02
C++	9.1940E-15	3.0107E-10	7.7068E-09
C-	1.6938E-06	1.4611E-04	2.5618E-04
CO	3.6817E-01	6.2013E-02	1.8772E-02
CO+	2.0184E-04	6.5388E-04	6.1895E-04
CO2	1.8017E-04	3.2952E-05	6.0751E-06
C2	2.6127E-04	1.5749E-03	9.1911E-04

P1 = 2.00E+03 N/SQ-M, US1= 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0004E+03	1.3717E+04	1.8454E+04
T	2.7635E+01	4.3827E+01	5.2022E+01
RHO	1.5905E+01	1.0508E+02	1.1320E+02
H	-2.4753E+00	-5.4683E+00	-6.5391E+00
A	7.5246E+00	1.1386E+01	1.2692E+01
S	2.2261E+00	2.4498E+00	2.5352E+00
Z	2.2900E+00	2.9783E+00	3.1303E+00
GAME	8.9470E-01	9.9318E-01	9.8927E-01
U	2.7047E+01	4.0993E+00	4.4655E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7025E-03	2.1424E-02	4.9804E-02
O	5.6113E-01	6.3831E-01	6.1634E-01
O+	1.6107E-04	4.0578E-03	1.3382E-02
O++	1.9877E-20	6.6053E-13	1.3350E-10
O-	2.3364E-05	6.3105E-04	9.7761E-04
O2	9.2471E-04	9.7479E-04	5.5948E-04
O2+	4.3816E-06	4.3879E-05	6.9915E-05
O2-	6.2264E-08	2.2218E-06	2.2424E-06
C	1.2421E-01	2.8927E-01	2.7401E-01
C+	1.3215E-03	1.7554E-02	3.7129E-02
C++	4.0721E-14	3.0118E-09	9.4670E-08
C-	3.5973E-06	2.1326E-04	3.2141E-04
CO	3.0970E-01	2.5846E-02	6.4212E-03
CO+	2.4255E-04	6.1585E-04	5.2388E-04
CO2	1.2744E-04	9.1870E-06	1.2419E-06
C2	4.4536E-04	1.0522E-03	4.5452E-04

P1 = 2.00E+03 N/SQ-M, US1= 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5479E+02	1.2927E+04	1.7241E+04
T	2.7098E+01	4.1619E+01	4.8991E+01
RHO	1.5733E+01	1.0655E+02	1.1446E+02
H	-2.2991E+00	-5.1397E+00	-6.1276E+00
A	7.3660E+00	1.0900E+01	1.2250E+01
S	2.1967E+00	2.4155E+00	2.4999E+00
Z	2.2596E+00	2.9153E+00	3.0747E+00
GAME	8.9404E-01	9.7926E-01	9.9713E-01
U	2.6334E+01	3.8936E+00	4.1916E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.3687E-03	1.5749E-02	3.7132E-02
O	5.5154E-01	6.3826E-01	6.2794E-01
O+	1.3550E-04	2.6906E-03	8.8387E-03
O++	7.8890E-21	1.0887E-13	2.2124E-11
O-	1.9198E-05	5.3768E-04	8.7455E-04
O2	9.8419E-04	1.1901E-03	7.0511E-04
O2+	4.1830E-06	3.8190E-05	6.1090E-05
O2-	5.4402E-08	2.2389E-06	2.4079E-06
C	1.0535E-01	2.8486E-01	2.8340E-01
C+	1.0276E-03	1.3096E-02	2.8031E-02
C++	2.0103E-14	9.0734E-10	2.9308E-08
C-	2.5393E-06	1.7842E-04	2.9584E-04
CO	3.3883E-01	4.1399E-02	1.0697E-02
CO+	2.2323E-04	6.4203E-04	5.7177E-04
CO2	1.5114E-04	1.8313E-05	2.6326E-06
C2	3.6370E-04	1.3336E-03	6.4002E-04

P1 = 2.00E+03 N/SQ-M, US1= 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0593E+03	1.4521E+04	1.9655E+04
T	2.8158E+01	4.6280E+01	5.4906E+01
RHO	1.6063E+01	1.0344E+02	1.1240E+02
H	-2.6561E+00	-5.8049E+00	-6.9584E+00
A	7.6867E+00	1.1843E+01	1.3094E+01
S	2.2557E+00	2.4825E+00	2.5690E+00
Z	2.3420E+00	3.0333E+00	3.1847E+00
GAME	8.9599E-01	9.9917E-01	9.8049E-01
U	2.7759E+01	4.3163E+00	4.6252E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.0774E-03	2.9087E-02	6.3605E-02
O	5.7055E-01	6.3445E-01	6.0225E-01
O+	1.9040E-04	6.1593E-03	1.9019E-02
O++	4.7703E-20	4.0653E-12	6.1606E-10
O-	2.7968E-05	7.2722E-04	1.0601E-03
O2	8.7464E-04	7.8584E-04	4.5491E-04
O2+	4.6108E-06	5.0315E-05	7.8188E-05
O2-	7.0539E-08	2.1428E-06	2.0749E-06
C	1.4275E-01	2.8809E-01	2.6244E-01
C+	1.6553E-03	2.3273E-02	4.5429E-02
C++	7.8428E-14	1.0004E-08	2.5481E-07
C-	4.8883E-06	2.4646E-04	3.3841E-04
CO	2.8098E-01	1.5753E-02	4.1210E-03
CO+	2.6006E-04	5.7978E-04	4.7899E-04
CO2	1.0745E-04	4.4256E-06	6.2219E-07
C2	5.2325E-04	7.9117E-04	3.2564E-04

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1136E+03	1.5336E+04	2.0897E+04
T	2.4677E+01	4.8840E+01	5.7616E+01
RHD	1.6210E+01	1.0185E+02	1.1197E+02
M	-2.4615E+00	-6.1494E+00	-7.3844E+00
A	7.8532E+00	1.2251E+01	1.3475E+01
S	2.2855E+00	2.5139E+00	2.6016E+00
Z	2.3955E+00	3.0831E+00	3.2394E+00
GAME	8.9779E-01	9.9674E-01	9.7296E-01
U	2.8470E+01	4.5396E+00	4.8173E+00

SPECIES	MOLE FRACTIONS		
E-	2.5007E-03	3.8642E-02	7.7931E-02
O	5.7973E-01	6.2707E-01	5.8657E-01
O+	2.2452E-04	9.1430E-03	2.5575E-02
O++	1.1120E-19	2.2522E-11	2.2528E-09
O-	3.3059E-05	8.1798E-04	1.1221E-03
O2	8.3011E-04	6.3416E-04	3.7795E-04
O2+	4.8696E-06	5.7126E-05	8.5607E-05
O2-	7.9174E-08	2.0256E-06	1.9139E-06
C	1.0088E-01	2.8249E-01	2.5121E-01
C+	2.0350E-03	2.9997E-02	5.3405E-02
C++	1.4617E-13	3.0775E-08	5.8692E-07
C-	6.4348E-06	2.7445E-04	3.4621E-04
CO	2.5274E-01	9.7416E-03	2.8045E-03
CO+	2.7587E-04	5.3946E-04	4.3793E-04
CO2	9.0216E-05	2.1638E-06	3.4416E-07
C2	5.9463E-04	5.8227E-04	2.3870E-04

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 8.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2259E+03	1.7005E+04	2.3418E+04
T	2.9735E+01	5.3926E+01	6.2605E+01
RHD	1.6450E+01	9.9156E+01	1.1164E+02
M	-3.2256E+00	-6.8632E+00	-8.2590E+00
A	8.2031E+00	1.2978E+01	1.4209E+01
S	2.3458E+00	2.5755E+00	2.6644E+00
Z	2.5003E+00	3.1802E+00	3.3505E+00
GAME	9.0292E-01	9.8209E-01	9.6253E-01
U	2.9687E+01	4.9652E+00	5.1637E+00

SPECIES	MOLE FRACTIONS		
E-	3.5353E-03	6.2216E-02	1.0709E-01
O	5.9724E-01	6.0432E-01	5.5222E-01
O+	3.1312E-04	1.8008E-02	4.0929E-02
O++	5.8773E-19	4.2349E-10	1.8214E-08
O-	4.4934E-05	9.6361E-04	1.1930E-03
O2	7.4827E-04	4.2674E-04	2.7195E-04
O2+	5.4800E-06	7.0482E-05	9.7401E-05
O2-	9.7254E-08	1.7487E-06	1.6117E-06
C	1.9561E-01	2.6381E-01	2.2865E-01
C+	2.9697E-03	4.4952E-02	6.7232E-02
C++	4.8390E-13	2.0776E-07	2.2303E-06
C-	1.0402E-05	3.0899E-04	3.4343E-04
CO	1.9845E-01	4.1505E-03	1.4688E-03
CO+	3.0248E-04	4.5893E-04	3.6538E-04
CO2	6.1855E-05	5.9562E-07	1.2543E-07
C2	7.0811E-04	3.1518E-04	1.3535E-04

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1691E+03	1.6163E+04	2.2153E+04
T	2.9200E+01	5.1449E+01	6.0176E+01
RHD	1.6340E+01	1.0030E+02	1.1175E+02
M	-3.0314E+00	-6.5021E+00	-7.8179E+00
A	8.0249E+00	1.2629E+01	1.3846E+01
S	2.3150E+00	2.5453E+00	2.6333E+00
Z	2.4503E+00	3.1321E+00	3.2945E+00
GAME	9.0009E-01	9.8975E-01	9.6704E-01
U	2.9179E+01	4.7601E+00	4.9960E+00

SPECIES	MOLE FRACTIONS		
E-	2.9821E-03	5.0020E-02	9.2500E-02
O	5.8665E-01	6.1663E-01	5.6977E-01
O+	2.6480E-04	1.3167E-02	3.2923E-02
O++	2.5570E-19	1.0897E-10	6.8804E-09
O-	3.8691E-05	8.9488E-04	1.1657E-03
O2	7.8859E-04	5.1477E-04	3.1882E-04
O2+	5.1587E-06	6.4028E-05	9.2040E-05
O2-	8.6115E-08	1.8852E-06	1.7594E-06
C	1.7853E-01	2.7381E-01	2.3971E-01
C+	2.4692E-03	3.7487E-02	6.0597E-02
C++	2.6711E-13	8.6124E-08	1.1994E-06
C-	8.2026E-06	2.9554E-04	3.4762E-04
CO	2.2525E-01	6.1849E-03	1.9951E-03
CO+	2.9002E-04	4.9767E-04	4.0016E-04
CO2	7.5141E-05	1.0920E-06	2.0274E-07
C2	6.5703E-04	4.2456E-04	1.7831E-04

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2840E+03	1.7855E+04	2.4682E+04
T	3.0292E+01	5.6287E+01	6.4929E+01
RHD	1.6536E+01	9.8245E+01	1.1156E+02
M	-3.4249E+00	-7.2328E+00	-8.7081E+00
A	8.3891E+00	1.3313E+01	1.4568E+01
S	2.3762E+00	2.6050E+00	2.6949E+00
Z	2.5635E+00	3.2288E+00	3.4076E+00
GAME	9.0637E-01	9.7525E-01	9.5941E-01
U	3.0593E+01	5.166E+00	5.3231E+00

SPECIES	MOLE FRACTIONS		
E-	4.1794E-03	7.5000E-02	1.2162E-01
O	6.0548E-01	5.9058E-01	5.3411E-01
O+	3.7215E-04	2.3629E-02	4.9490E-02
O++	1.3676E-18	1.3819E-09	4.3133E-08
O-	5.1874E-05	1.0140E-03	1.2059E-03
O2	7.0770E-04	3.5931E-04	2.3360E-04
O2+	5.8369E-06	7.6360E-05	1.0165E-04
O2-	1.0646E-07	1.6165E-06	1.4697E-06
C	2.1203E-01	2.5325E-01	2.1812E-01
C+	3.5531E-03	5.2202E-02	7.3225E-02
C++	8.7781E-13	4.4569E-07	3.8563E-06
C-	1.2889E-05	3.1590E-04	3.3524E-04
CO	1.7250E-01	2.9091E-03	1.1041E-03
CO+	3.1312E-04	4.2286E-04	3.3316E-04
CO2	5.0112E-05	3.4528E-07	8.0466E-08
C2	7.4563E-04	2.3759E-04	1.0400E-04

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M, } U_{S1} = 9.00E+03 \text{ M/SEC}$

	MUING SHUCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3433E+03	1.8706E+04	2.5938E+04
T	3.0880E+01	5.8535F+01	6.7132E+01
RHO	1.6596E+01	9.7480F+01	1.1152E+02
H	-3.6284E+00	-7.61C6F+00	-9.1655E+00
A	8.5850E+00	1.3640E+01	1.4916E+01
S	2.4068E+00	2.6340E+00	2.7244E+00
Z	2.0211E+00	3.2783F+00	3.4645E+00
GAME	9.1057E-01	9.6959E-01	9.5690E-01
U	3.1245E+01	5.3356F+00	5.4775E+00

 $P_1 = 2.00E+03 \text{ N/SQ-M, } U_{S1} = 9.20E+03 \text{ M/SEC}$

	MUING SHUCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4038E+03	1.9550E+04	2.7174E+04
T	3.1514E+01	6.0683E+01	6.9334E+01
RHO	1.6625E+01	9.6776E+01	1.1118E+02
H	-3.8365E+00	-7.9965E+00	-9.6308E+00
A	8.7935E+00	1.3963E+01	1.5261E+01
S	2.4374E+00	2.6626E+00	2.7549E+00
Z	2.6794E+00	3.3290E+00	3.5249E+00
GAME	9.1574E-01	9.6509E-01	9.5535E-01
U	3.1995E+01	5.5047E+00	5.6250E+00

SPECIES ----- MOLE FRACTIONS -----

E-	4.9413E-03	8.8113E-02	1.3570E-01
O	6.1330E-01	5.7579F-01	5.1593E-01
O+	4.4577E-04	2.9939E-02	5.8362E-02
O++	3.2019E-18	3.8995E-09	9.2450E-08
O-	5.9625E-05	1.0507E-03	1.2088E-03
U2	6.6593E-04	3.0625E-04	2.0210E-04
O2+	6.2344E-06	8.1535E-05	1.0470E-04
O2-	1.1557E-07	1.4895E-06	1.3309E-06
C	2.2771E-01	2.4264E-01	2.0835E-01
C+	4.2430E-03	5.9071E-02	7.8509E-02
C++	1.6100E-12	8.6787E-07	6.2420E-06
C-	1.5707E-05	3.1741F-04	3.2447E-04
CO	1.4748E-01	2.1130E-03	8.5791E-04
CO+	3.2176E-04	3.8931F-04	3.0387E-04
CO2	3.4756E-05	2.1047E-07	5.3486E-08
C2	7.6742E-04	1.8166E-04	8.1094E-05

SPECIES ----- MOLE FRACTIONS -----

E-	5.8607E-03	1.0140F-01	1.5032E-01
O	6.2063E-01	5.6020E-01	4.9072E-01
O+	5.3991E-04	3.6860E-02	6.7969E-02
O++	8.0588E-18	9.7835F-09	1.8835E-07
O-	6.4337E-05	1.0746E-03	1.1946E-03
U2	6.2178E-04	2.6330E-04	1.7405E-04
O2+	6.6803E-06	8.5930F-05	1.0675E-04
O2-	1.2435E-07	1.3673E-06	1.2008E-06
C	2.4251E-01	2.3224E-01	1.9872E-01
C+	5.0735E-03	6.5484E-02	8.3460E-02
C++	3.0132E-12	1.5631E-06	9.8118E-06
C-	1.9093E-05	3.1437E-04	3.1065E-04
CO	1.2354E-01	1.5782E-03	6.6590E-04
CO+	3.2814E-04	3.5801E-04	2.7534E-04
CO2	3.0692E-05	1.3342E-07	3.5639E-08
C2	7.7137E-04	1.4052E-04	6.3011E-05

 $P_1 = 2.00E+03 \text{ N/SQ-M, } U_{S1} = 9.40E+03 \text{ M/SEC}$

	MUING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4654E+03	2.0369E+04	2.8370E+04
T	3.2210E+01	6.2736E+01	7.1436E+01
RHO	1.6617E+01	9.6035E+01	1.1078E+02
H	-4.0490E+00	-8.3894E+00	-1.0105E+01
A	9.0183E+00	1.4281E+01	1.5635E+01
S	2.4681E+00	2.6910E+00	2.7844E+00
Z	2.7379E+00	3.3808E+00	3.5849E+00
GAME	9.2424E-01	9.6161E-01	9.5406E-01
U	3.2689E+01	5.6646E+00	5.7742E+00

 $P_1 = 2.00E+03 \text{ N/SQ-M, } U_{S1} = 9.60E+03 \text{ M/SEC}$

	MUING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5280E+03	2.1152E+04	2.9504E+04
T	3.2992E+01	6.4694F+01	7.3498E+01
RHO	1.6505E+01	9.5229E+01	1.1008E+02
H	-4.2660E+00	-8.7897E+00	-1.0584E+01
A	9.2048E+00	1.4595E+01	1.5994E+01
S	2.4987E+00	2.7190E+00	2.8142E+00
Z	2.7960E+00	3.4333E+00	3.6407E+00
GAME	9.3003E-01	9.5900E-01	9.5439E-01
U	3.3378E+01	5.8176E+00	5.9123E+00

SPECIES ----- MOLE FRACTIONS -----

E-	6.9989E-03	1.1473E-01	1.6430E-01
O	6.2735E-01	5.4402E-01	4.7777E-01
O+	6.6415E-04	4.4298E-02	7.7659E-02
O++	2.1229E-17	2.2232E-08	3.5619E-07
O-	7.8207E-05	1.0867F-03	1.1732E-03
U2	5.7440E-04	2.2775E-04	1.5050E-04
O2+	7.1852E-06	8.9462E-05	1.0701E-04
O2-	1.3245E-07	1.2491F-06	1.0750E-06
C	2.5025E-01	2.2219F-01	1.8985E-01
C+	6.0970E-03	7.1404E-02	8.7788E-02
C++	5.8528E-12	2.6389F-06	1.4694E-05
C-	2.2935E-05	3.0822E-04	2.9572E-04
CO	1.0084E-01	1.2052F-03	5.2574E-04
CO+	3.3185E-04	3.2874F-04	2.4954E-04
CO2	2.2063E-05	8.7274F-08	2.4354E-08
C2	7.5545E-04	1.0978F-04	4.9250E-05

SPECIES ----- MOLE FRACTIONS -----

E-	8.4520E-03	1.2794E-01	1.7039E-01
O	6.3332E-01	5.2750E-01	4.5848E-01
O+	6.3446E-04	5.2124E-02	8.7693E-02
O++	6.1227E-17	4.6358E-08	6.4388E-07
O-	8.9514E-05	1.0882F-03	1.1418E-03
U2	5.4304E-04	1.9794E-04	1.2966E-04
O2+	7.7657E-06	9.2098E-05	1.0732E-04
O2-	1.3946E-07	1.1361E-06	9.5247E-07
C	2.6866E-01	2.1262F-01	1.8134E-01
C+	7.3944E-03	7.6803F-02	9.1740E-02
C++	1.2004E-11	4.2131E-06	2.1401E-05
C-	2.7308E-05	2.9926E-04	2.7934E-04
CO	7.9625E-02	9.3803E-04	4.1702E-04
CO+	3.3240E-04	3.0153E-04	2.2521E-04
CO2	1.6253E-05	5.8649E-08	1.6738E-08
C2	7.1802E-04	8.6590E-05	3.9010E-05

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 9.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5917E+03	2.1877E+04	3.0552E+04
T	3.3092E+01	6.6609E+01	7.5502E+01
RHD	1.6461E+01	9.4166E+01	1.0908E+02
H	-4.4875E+00	-9.1965E+00	-1.1072E+01
A	9.5396E+00	1.4912E+01	1.6353E+01
S	2.5292E+00	2.7474E+00	2.8438E+00
Z	2.8531E+00	3.4879E+00	3.7095E+00
GAME	9.4118E-01	9.5709E-01	9.5478E-01
U	3.4059E+01	5.9629E+00	6.0525E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0471E-02	1.4135E-01	1.9218E-01
O	6.3829E-01	5.1031E-01	4.3921E-01
O+	1.0779E-03	6.0481E-02	9.7862E-02
O++	1.9683E-16	9.1384E-08	1.1112E-06
O-	1.0261E-04	1.0792E-03	1.1024E-03
O2	4.6720E-04	1.7175E-04	1.1147E-04
O2+	8.4441E-06	9.3796E-05	1.0597E-04
O2-	1.4478E-07	1.0234E-06	8.3664E-07
C	2.7933E-01	2.0328E-01	1.7326E-01
C+	9.0912E-03	8.1856E-02	9.5307E-02
C++	2.6397E-11	6.4905E-06	3.0308E-05
C-	3.2530E-05	2.8779E-04	2.6224E-04
CO	6.0231E-02	7.3598E-04	3.3279E-04
CO+	3.2914E-04	2.7541E-04	2.0270E-04
CO2	1.0871E-05	3.9804E-08	1.1596E-08
CZ	6.5822E-04	6.8370E-05	3.0618E-05

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.05E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8206E+03	2.3689E+04	3.3157E+04
T	3.8520E+01	7.2710E+01	8.2130E+01
RHD	1.5602E+01	8.8368E+01	1.0247E+02
H	-5.2507E+00	-1.0661E+01	-1.2823E+01
A	1.0742E+01	1.6000E+01	1.7624E+01
S	2.6525E+00	2.8467E+00	2.9484E+00
Z	3.0294E+00	3.6868E+00	3.9347E+00
GAME	9.8887E-01	9.5499E-01	9.5989E-01
U	3.6362E+01	6.4297E+00	6.5300E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.5183E-02	1.8717E-01	2.3910E-01
O	6.4123E-01	4.4895E-01	3.708E-01
O+	3.5259E-03	9.1614E-02	1.3405E-01
O++	3.8448E-14	6.3936E-07	5.7147E-06
O-	1.6682E-04	9.8094E-04	9.1370E-04
O2	2.5517E-04	1.0391E-04	6.3141E-05
O2+	1.2018E-05	9.2314E-05	9.3741E-05
O2-	1.4079E-07	6.6007E-07	4.8670E-07
C	2.9291E-01	1.7382E-01	1.4735E-01
C+	2.1587E-02	9.6444E-02	1.0575E-01
C++	8.8119E-10	2.2521E-05	8.7457E-05
C-	5.6230E-05	2.3721E-04	1.9942E-04
CO	1.4462E-02	3.3684E-04	1.5294E-04
CO+	2.8115E-04	1.9659E-04	1.3005E-04
CO2	1.3932E-06	1.1214E-08	3.2322E-09
CZ	3.3107E-04	3.0898E-05	1.3540E-05

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.00E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6562E+03	2.2520E+04	3.1480E+04
T	3.4953E+01	6.8436E+01	7.7455E+01
RHD	1.6294E+01	9.2875E+01	1.0770E+02
H	-4.7133E+00	-9.6089E+00	-1.1566E+01
A	9.8503E+00	1.5224E+01	1.6713E+01
S	2.5594E+00	2.7756E+00	2.8735E+00
Z	2.9080E+00	3.5432E+00	3.7736E+00
GAME	9.5458E-01	9.5583E-01	9.5568E-01
U	3.4732E+01	6.1027E+00	6.1908E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.3002E-02	1.5457E-01	2.0580E-01
O	6.4187E-01	4.9299E-01	4.1994E-01
O+	1.4428E-03	6.9086E-02	1.0815E-01
O++	7.3330E-16	1.6896E-07	1.8450E-06
O-	1.1793E-04	1.0610E-03	1.0555E-03
O2	4.0710E-04	1.4917E-04	9.5407E-05
O2+	9.2518E-06	9.4523E-05	1.0357E-04
O2-	1.4770E-07	9.1550E-07	7.2702E-07
C	2.8766E-01	1.9443E-01	1.6552E-01
C+	1.1385E-02	8.6452E-02	9.8575E-02
C++	6.3736E-11	9.6014E-06	4.1961E-05
C-	3.8477E-05	2.7472E-04	2.4459E-04
CO	4.3161E-02	5.8427E-04	2.6630E-04
CO+	3.2134E-04	2.5107E-04	1.8170E-04
CO2	6.7286E-06	2.7453E-08	8.0555E-09
CZ	5.7726E-04	5.4323E-05	2.4371E-05

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.10E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9910E+03	2.4633E+04	3.4516E+04
T	4.2824E+01	7.6767E+01	8.6763E+01
RHD	1.4839E+01	8.3621E+01	9.6652E+01
H	-5.9077E+00	-1.1751E+01	-1.4124E+01
A	1.1515E+01	1.6788E+01	1.8579E+01
S	2.7011E+00	2.9174E+00	3.0238E+00
Z	3.1330E+00	3.8374E+00	4.1151E+00
GAME	9.8830E-01	9.5674E-01	9.6662E-01
U	3.7960E+01	6.7464E+00	6.8776E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.7599E-02	2.1886E-01	2.7139E-01
O	6.2441E-01	4.0457E-01	3.2480E-01
O+	8.7229E-03	1.1507E-01	1.6001E-01
O++	2.0242E-12	1.9801E-06	1.5808E-05
O-	2.1831E-04	8.7544E-04	7.5972E-04
O2	1.5182E-04	7.1655E-05	4.0396E-05
O2+	1.5503E-05	8.6264E-05	8.0854E-05
O2-	1.2007E-07	4.6779E-07	3.0783E-07
C	2.7506E-01	1.5532E-01	1.3062E-01
C+	3.8919E-02	1.0452E-01	1.1175E-01
C++	1.1784E-08	4.6695E-05	1.7049E-04
C-	7.1637E-05	1.9938E-04	1.5866E-04
CO	4.4383E-03	1.9935E-04	8.7230E-05
CO+	2.3068E-04	1.5192E-04	9.9490E-05
CO2	2.5347E-07	4.7512E-09	1.2780E-09
CZ	1.5964E-04	1.7846E-05	7.4042E-06

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

P1 = 2.00E+03 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1703E+03	2.5892E+04	3.6337E+04
T	4.6803E+01	8.0875E+01	9.1657E+01
RHO	1.4319E+01	8.0167E+01	9.2364E+01
H	-6.5474E+00	-1.2898E+01	-1.5514E+01
A	1.2157E+01	1.7615E+01	1.9594E+01
S	2.7654E+00	2.9863E+00	3.0944E+00
Z	3.2384E+00	3.9935E+00	4.2936E+00
GAME	9.7510E+01	9.6068E+01	9.7555E+01
U	3.9581E+01	7.0800E+00	7.2563E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	7.5654E-04	2.4926E-01	3.0161E-01
O	5.4776E-01	3.6061E-01	2.7966E-01
O+	1.7440E-02	1.3894E-01	1.8499E-01
O++	4.2030E-11	5.4556E-06	3.9806E-05
U-	2.5557E-04	7.6516E-04	6.1595E-04
U2	9.8955E-05	4.9128E-05	2.5342E-05
U2+	1.8776E-05	7.8415E-05	6.7543E-05
U2-	1.0127E-07	3.2407E-07	1.8950E-07
C	2.4797E-01	1.3892E-01	1.1572E-01
C+	5.8441E-02	1.1087E-01	1.1051E-01
C++	8.3461E-08	9.0045E-05	3.1057E-04
C-	7.9110E-05	1.6560E-04	1.2419E-04
CO	1.7143E-03	1.2020E-04	4.9035E-05
CO+	1.8984E-04	1.1649E-04	7.1817E-05
CO2	6.3970E-08	2.0747E-09	5.0767E-10
C2	6.1004E-05	1.0471E-05	4.1431E-06

P1 = 2.00E+03 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5504E+03	2.9261E+04	4.1432E+04
T	3.3470E+01	8.9566E+01	1.0206E+02
RHO	1.3764E+01	7.5638E+01	8.6281E+01
H	-7.9130E+00	-1.5363E+01	-1.8550E+01
A	1.3341E+01	1.9417E+01	2.1904E+01
S	2.8884E+00	3.1192E+00	3.2367E+00
Z	3.4605E+00	4.3192E+00	4.6675E+00
GAME	9.5902E+01	9.7456E+01	9.9913E+01
U	4.2647E+01	7.8284E+00	8.1547E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.3588E-01	3.0572E-01	3.5745E-01
O	5.3222E-01	2.7651E-01	1.9654E-01
O+	4.3389E-02	1.8569E-01	2.3121E-01
O++	2.4009E-09	3.3054E-05	2.3510E-04
U-	2.6776E-04	5.4477E-04	3.6201E-04
U2	5.1547E-05	2.1874E-05	8.6801E-06
U2+	2.3497E-05	5.9391E-05	4.1662E-05
U2-	7.1344E-08	1.4377E-07	6.0606E-08
C	1.9478E-01	1.1099E-01	8.8949E-02
C+	9.2699E-02	1.1991E-01	1.2396E-01
C++	1.0984E-06	2.9493E-04	1.0040E-03
C-	7.7496E-05	1.0950E-04	7.0270E-05
CO	4.3491E-04	4.3912E-05	1.4800E-05
CO+	1.3201E-04	6.5903E-05	3.4247E-05
CO2	6.6200E-09	3.9807E-10	6.9390E-11
C2	2.7141E-05	3.6338E-06	1.1625E-06

P1 = 2.00E+03 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3589E+03	2.7466E+04	3.8702E+04
T	5.0310E+01	8.5094E+01	9.7007E+01
RHO	1.3494E+01	7.7721E+01	8.9076E+01
H	-7.2101E+00	-1.4103E+01	-1.6988E+01
A	1.2758E+01	1.8482E+01	2.0705E+01
S	2.8280E+00	3.0529E+00	3.1681E+00
Z	3.3505E+00	4.1530E+00	4.4789E+00
GAME	9.6557E+01	9.6660E+01	9.8609E+01
U	4.1230E+01	7.4386E+00	7.6833E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.0505E-01	2.7801E-01	3.3044E-01
O	5.6033E-01	3.1807E-01	2.3670E-01
O+	2.9171E-02	1.6247E-01	2.0903E-01
O++	4.0977E-10	1.3754E-05	9.8091E-05
U-	2.7766E-04	6.5523E-04	4.8179E-04
U2	6.9406E-05	3.3308E-05	1.5210E-05
U2+	2.1471E-05	6.9417E-05	5.4270E-05
U2-	8.4054E-08	2.2046E-07	1.1006E-07
C	2.2033E-01	1.2439E-01	1.0109E-01
C+	7.0057E-02	1.1582E-01	1.2051E-01
C++	3.5576E-07	1.6482E-04	5.8917E-04
C-	8.0245E-05	1.3606E-04	9.4603E-05
CO	8.0998E-04	7.3206E-05	2.7704E-05
CO+	1.5794E-04	8.8544E-05	5.0390E-05
CO2	2.1479E-08	9.2067E-10	1.9294E-10
C2	4.0772E-05	6.2096E-06	2.2461E-06

P1 = 2.00E+03 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7627E+03	3.1209E+04	4.4458E+04
T	5.6391E+01	9.4253E+01	1.0934E+02
RHO	1.3641E+01	7.3799E+01	8.3730E+01
H	-8.6349E+00	-1.6676E+01	-2.0197E+01
A	1.3915E+01	2.0401E+01	2.3108E+01
S	2.9477E+00	3.1838E+00	3.3079E+00
Z	3.5914E+00	4.4868E+00	4.8500E+00
GAME	9.5608E+01	9.8417E+01	1.0104E+02
U	4.4577E+01	8.2510E+00	8.6600E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.6525E-01	3.3161E-01	3.8230E-01
O	4.9050E-01	2.3748E-01	1.6032E-01
O+	3.9597E-02	2.0766E-01	2.5004E-01
O++	1.0729E-08	7.5356E-05	5.4452E-04
U-	2.8802E-04	4.4037E-04	2.6070E-04
U2	3.9004E-05	1.3951E-05	4.6964E-06
U2+	2.4043E-05	4.9174E-05	3.0504E-05
U2-	5.9457E-08	9.9049E-08	3.1029E-08
C	1.7190E-01	9.8794E-02	7.6606E-02
C+	1.0587E-01	1.2330E-01	1.2692E-01
C++	2.7485E-06	5.1490E-04	1.9841E-03
C-	7.2586E-05	8.6513E-05	5.0420E-05
CO	2.3333E-04	2.6023E-05	7.6792E-06
CO+	1.1035E-04	4.8183E-05	2.2455E-05
CO2	3.6753E-09	1.6879E-10	2.3624E-11
C2	1.0771E-05	2.1088E-06	6.0060E-07

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M.} \quad US1 = 1.35E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9774E+03	3.3264E+04	4.7724E+04
T	5.9149E+01	9.9245E+01	1.1640E+02
RHO	1.3537E+01	7.1993E+01	8.1347E+01
H	-4.3448E+00	-1.8040E+01	-2.1922E+01
A	1.4447E+01	2.1441E+01	2.4444E+01
S	3.0002E+00	3.2470E+00	3.3758E+00
Z	3.7184E+00	4.6556E+00	5.0400E+00
GAME	9.5425E+01	9.9499E+01	1.0108E+02
U	4.6223E+01	8.7101E+00	9.2222E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.9304E-01	3.5581E-01	4.0490E-01
O	4.5991E-01	2.0114E-01	1.2892E-01
O+	7.7310E-02	2.2779E-01	2.6837E-01
O++	3.7451E-08	1.6598E-04	1.2414E-03
U-	2.0230E-04	3.4459E-04	1.8093E-04
O2	2.9031E-05	8.5925E-06	2.4219E-06
O2+	2.5453E-05	3.9251E-05	2.1375E-05
O2-	4.9401E-08	5.3565E-08	1.4940E-08
C	1.5142E-01	8.7439E-02	6.5332E-02
C+	1.1625E-01	1.2625E-01	1.2913E-01
C++	5.9507E-06	8.8828E-04	3.5817E-03
C-	6.0501E-05	6.6761E-05	3.5019E-05
CO	1.5263E-04	1.5052E-05	3.8227E-06
CO+	9.2008E-05	3.4387E-05	1.4224E-05
CO2	1.8701E-09	6.8573E-11	7.4719E-12
C2	1.0050E-05	1.1993E-06	2.9221E-07

 $P_1 = 2.00E+03 \text{ N/SQ-M.} \quad US1 = 1.45E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4215E+03	3.7569E+04	5.4782E+04
T	6.4381E+01	1.1040E+02	1.3151E+02
RHO	1.3382E+01	6.8190E+01	7.7382E+01
H	-1.0990E+01	-2.0914E+01	-2.5625E+01
A	1.5644E+01	2.3650E+01	2.6785E+01
S	3.1217E+00	3.3706E+00	3.5060E+00
Z	3.9828E+00	4.9903E+00	5.3833E+00
GAME	9.5440E-01	1.0152E+00	1.0134E+00
U	4.9644E+01	9.7430E+00	1.0375E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4706E-01	3.9897E-01	4.4282E-01
O	5.0018E-01	1.3827E-01	8.3126E-02
O+	1.1550E-01	2.6150E-01	2.8312E-01
O++	2.9216E-07	7.4741E-04	5.1000E-03
O-	2.5413E-04	1.9011E-04	8.4103E-05
O2	1.7524E-05	2.8218E-06	6.2803E-07
O2+	2.4779E-05	2.2256E-05	9.8262E-06
O2-	3.2025E-08	1.5946E-08	3.3205E-09
C	1.1903E-01	6.6676E-02	4.6324E-02
C+	1.3173E-01	1.3097E-01	1.2919E-01
C++	2.1197E-05	2.5939E-03	1.0136E-02
C-	5.3598E-05	3.6640E-05	1.6417E-05
CO	6.4448E-05	4.5705E-06	9.3985E-07
CO+	6.3444E-05	1.6065E-05	5.4780E-06
CO2	4.9060E-10	9.6710E-12	7.7673E-13
C2	4.5320E-06	3.5567E-07	7.0270E-08

 $P_1 = 2.00E+03 \text{ N/SQ-M.} \quad US1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2004E+03	3.5398E+04	5.1189E+04
T	6.1794E+01	1.0460E+02	1.2302E+02
RHO	1.3455E+01	7.0159E+01	7.9270E+01
H	-1.0170E+01	-1.9453E+01	-2.3745E+01
A	1.5002E+01	2.2528E+01	2.5659E+01
S	3.0641E+00	3.3090E+00	3.4412E+00
Z	3.8490E+00	4.8235E+00	5.2131E+00
GAME	9.5370E+01	1.0059E+00	1.0190E+00
U	4.7453E+01	9.2021E+00	9.8020E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2093E-01	3.7821E-01	4.2486E-01
O	4.2249E-01	1.6802E-01	1.0343E-01
O+	9.6081E-02	2.4589E-01	2.7728E-01
O++	1.1126E-07	3.5558E-04	2.6253E-03
O-	2.7038E-04	2.6069E-04	1.2322E-04
O2	2.2912E-05	5.0350E-06	1.2322E-06
O2+	2.5419E-05	3.0170E-05	1.4617E-05
O2-	3.9950E-08	3.0153E-08	7.0340E-09
C	1.3438E-01	7.6795E-02	5.5374E-02
C+	1.2505E-01	1.2883E-01	1.3007E-01
C++	1.1659E-05	1.5204E-03	6.1919E-06
C-	6.0125E-05	5.0214E-05	2.4081E-05
CO	9.9046E-05	8.4545E-06	1.8921E-06
CO+	7.6284E-05	2.3892E-05	8.8777E-06
CO2	9.4473E-10	2.6599E-11	2.3918E-12
C2	6.9073E-06	6.6486E-07	1.4411E-07

 $P_1 = 2.00E+03 \text{ N/SQ-M.} \quad US1 = 1.50E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6706E+03	3.9784E+04	5.8442E+04
T	6.6933E+01	1.1635E+02	1.3809E+02
RHO	1.3312E+01	6.6475E+01	7.5924E+01
H	-1.1831E+01	-2.2422E+01	-2.7554E+01
A	1.6236E+01	2.4708E+01	2.7798E+01
S	3.1788E+00	3.4280E+00	3.5682E+00
Z	4.1196E+00	5.1439E+00	5.5400E+00
GAME	9.5606E-01	1.0200E+00	1.0042E+00
U	5.1334E+01	1.0298E+01	1.0903E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.7201E-01	4.1691E-01	4.5857E-01
O	3.4985E-01	1.1385E-01	6.8065E-02
O+	1.3523E-01	2.7330E-01	2.8381E-01
O++	7.0546E-07	1.4748E-03	9.0600E-03
O-	2.3401E-04	1.3739E-04	5.9050E-05
O2	1.3301E-05	1.5778E-06	3.3928E-07
O2+	2.3609E-05	1.6176E-05	6.7455E-06
O2-	2.5186E-08	8.3643E-09	1.6755E-09
C	1.0554E-01	5.7737E-02	3.8844E-02
C+	1.3691E-01	1.3229E-01	1.2033E-01
C++	3.6507E-05	4.2539E-03	1.5144E-02
C-	4.7221E-05	2.6587E-05	1.1491E-05
CO	4.2541E-05	2.4863E-06	4.9426E-07
CO+	5.1653E-05	1.0755E-05	3.4688E-06
CO2	2.5831E-10	3.5895E-12	2.7957E-13
C2	2.9998E-06	1.9167E-07	3.6114E-08

TABLE I.- Continued

$$p_1 = 2 \text{ kN/m}^2$$

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 1.55E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9176E+03	4.2017E+04	6.2141E+04
T	6.9485E+01	1.2275E+02	1.4591E+02
RHO	1.3238E+01	6.4624E+01	7.4842E+01
H	-1.2699E+01	-2.3977E+01	-2.9530E+01
A	1.6844E+01	2.5742E+01	2.8752E+01
S	3.2357E+00	3.4867E+00	3.6285E+00
Z	4.2589E+00	5.2967E+00	5.6946E+00
GAME	9.5870E-01	1.0192E+00	9.9564E-01
U	5.3021E+01	1.0873E+01	1.1390E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	2.9580E-01	4.3372E-01	4.7290E-01
G	3.1430E-01	9.2791E-02	5.6702E-02
O+	1.5496E-01	2.8183E-01	2.8030E-01
O+	1.5846E-06	2.8416E-03	1.4402E-02
O-	2.1274E-04	9.6684E-05	4.2882E-05
O2	9.9674E-06	8.5089E-07	1.9375E-07
O2+	2.1997E-05	1.1367E-05	4.7222E-06
O2-	1.9373E-08	4.1909E-09	9.0200E-10
C	4.3618E-02	4.9264E-02	3.2806E-02
C+	1.4091E-01	1.3254E-01	1.2182E-01
C+	6.0407E-05	6.8773E-03	2.1011E-02
C-	4.1120E-05	1.8791E-05	8.2761E-06
CO	2.8220E-05	1.3086E-06	2.7487E-07
CO+	4.1943E-05	6.9804E-06	2.2563E-06
CO2	1.3033E-10	1.2685E-12	1.1109E-13
C2	1.9890E-06	9.9706E-08	1.9557E-08

 $P_1 = 2.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 1.60E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1722E+03	4.4284E+04	6.5833E+04
T	7.2069E+01	1.2908E+02	1.5249E+02
RHO	1.3156E+01	6.3090E+01	7.3953E+01
H	-1.3596E+01	-2.5582E+01	-3.1546E+01
A	1.7470E+01	2.6670E+01	2.9677E+01
S	3.2422E+00	3.5426E+00	3.6874E+00
Z	4.4004E+00	5.4380E+00	5.8377E+00
GAME	9.6232E-01	1.0133E+00	9.8933E-01
U	5.4704E+01	1.1425E+01	1.1825E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.1842E-01	4.4842E-01	4.8018E-01
O+	2.7977E-01	7.6473E-02	4.7946E-02
O+	1.7444E-01	2.8617E-01	2.7358E-01
O+	3.3798E-06	5.0504E-03	2.1031E-02
O-	1.8935E-04	6.9014E-05	3.2100E-05
O2	7.3445E-06	4.7296E-07	1.1051E-07
O2+	2.0039E-05	8.0319E-06	3.3748E-06
O2-	1.4521E-08	2.1707E-09	5.1630E-10
C	8.3013E-02	4.2031E-02	2.7844E-02
C+	1.4395E-01	1.3130E-01	1.1619E-01
C+	5.7434E-05	1.0457E-02	2.7187E-02
C-	3.5367E-05	1.3431E-05	6.1319E-06
CO	1.8695E-05	7.1094E-07	1.6103E-07
CO+	3.3687E-05	4.5818E-06	1.5078E-06
CO2	7.1389E-11	4.7555E-13	4.8296E-14
C2	1.3114E-06	5.3344E-08	1.1139E-08

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.570E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
KMO	0.1029E+00	1.9532E+01	2.7000E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5470E+00	1.7797E+00	1.9205E+00
S	1.0789E+00	1.0927E+00	1.1100E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1120E-01
U	3.0900E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS	
E-	3.041E-52	9.0742E-43
O	1.0300E-14	6.5851E-12
O+	0.3047E-28	4.2317E-34
U+	0.	0.
O-	2.4004E-50	8.9930E-48
O2	4.3992E-04	4.3992E-04
O2+	1.7097E-10	1.7597E-18
O2-	3.0300E-51	4.9434E-42
L	1.4900E-53	1.3109E-44
L+	0.2340E-04	1.8701E-55
L-	0.	0.
C-	2.1456E-48	1.9434E-81
CO	7.2203E-12	6.9566E-09
CO+	1.0031E-30	2.3096E-32
CO2	9.9950E-01	9.9956E-01
C2	9.1043E-70	7.9553E-65

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9420E+02	2.9102E+02
T	3.0042E+00	5.6861E+00	6.5403E+00
KMO	0.0418E+00	3.4141E+01	4.4425E+01
H	0.0932E-01	8.0789E-01	7.6502E-01
A	1.0039E+00	2.2638E+00	2.4190E+00
S	1.1407E+00	1.1750E+00	1.1904E+00
Z	1.0000E+00	1.0004E+00	1.0024E+00
GAME	9.1204E-01	9.0094E-01	8.9187E-01
U	4.3082E+00	1.0715E+00	1.0012E+00

SPECIES	MOLE FRACTIONS	
E-	2.8210E-55	4.5397E-20
O	2.0250E-10	4.3263E-07
O+	9.5093E-32	7.8230E-27
U+	0.	0.
O-	7.1028E-40	8.0727E-23
O2	4.4009E-04	8.4480E-04
O2+	1.7597E-10	1.7062E-18
O2-	1.1734E-35	7.2906E-21
C	1.3637E-37	2.3238E-24
C+	0.1103E-49	5.7257E-37
C-	0.	4.1799E-86
CO	1.5179E-07	7.6900E-39
CO+	3.4138E-07	1.1055E-04
CO2	1.2092E-29	4.2232E-24
C2	9.9950E-01	9.9834E-01

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2840E+01	1.2169E+02	1.9020E+02
T	3.1957E+00	4.5032E+00	5.2595E+00
KMO	1.1505E+00	2.7027E+01	3.6108E+01
H	4.1903E-01	8.6219E-01	8.2707E-01
A	1.7127E+00	2.0229E+00	2.1811E+00
S	1.1127E+00	1.1341E+00	1.1502E+00
Z	1.0000E+00	1.0000E+00	1.0001E+00
GAME	9.1904E-01	9.0872E-01	9.0430E-01
U	3.0201E+00	1.0100E+00	9.3909E-01

SPECIES	MOLE FRACTIONS	
E-	2.4099E-42	9.0186E-27
O	9.5340E-13	2.5682E-09
O+	2.1850E-34	9.4713E-30
U+	0.	0.
O-	1.5723E-47	2.0407E-30
O2	4.3992E-04	4.4241E-04
O2+	1.7597E-10	1.7597E-18
O2-	4.0047E-42	1.8352E-27
L	2.2466E-44	9.4755E-30
L+	4.3135E-55	1.0113E-41
L-	0.	2.0086E-98
C-	1.7000E-00	9.2076E-52
CO	1.6644E-09	4.9959E-06
CO+	1.4402E-32	7.8999E-27
CO2	9.9950E-01	9.9955E-01
C2	9.5773E-04	1.1834E-42

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1025E+01	2.8664E+02	4.1541E+02
T	4.6017E+00	6.9126E+00	7.7454E+00
KMO	0.8007E+00	4.1280E+01	5.2902E+01
H	0.5500E-01	7.4495E-01	6.9379E-01
A	2.0571E+00	2.4812E+00	2.6224E+00
S	1.1802E+00	1.2149E+00	1.2393E+00
Z	1.0000E+00	1.0045E+00	1.0129E+00
GAME	9.0773E-01	8.8660E-01	8.7645E-01
U	5.2491E+00	1.1204E+00	1.0442E+00

SPECIES	MOLE FRACTIONS	
E-	2.0211E-25	3.7039E-16
O	1.2034E-08	2.1289E-05
O+	2.2777E-29	3.1609E-23
U+	0.	2.4317E-87
O-	4.4929E-29	1.6799E-18
O2	4.5400E-04	4.9209E-03
O2+	1.7596E-10	4.6691E-16
O2-	1.5917E-26	9.3109E-17
C	1.0327E-28	9.1431E-20
C+	1.2196E-40	3.3776E-30
C-	3.0723E-96	2.2627E-71
CO	1.4524E-49	2.8851E-32
CO+	2.8306E-05	8.9872E-03
CO2	2.7284E-27	1.6768E-20
C2	9.9950E-01	9.8607E-01

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2105E+01	4.0116E+02	5.6235E+02
T	5.5037E+00	8.0226E+00	8.7596E+00
RHD	9.4630E+00	4.9112E+01	6.2030E+01
H	8.1626E-01	6.7316E-01	6.1421E-01
A	2.2275E+00	2.6701E+00	2.8051E+00
S	1.2120E+00	1.2545E+00	1.2800E+00
Z	1.0004E+00	1.0181E+00	1.0349E+00
GAME	9.0113E-01	8.7288E-01	8.6797E-01
U	5.9570E+00	1.1498E+00	1.0705E+00

P1 = 5.00E+03 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4563E+01	5.4255E+02	7.3879E+02
T	6.3651E+00	8.9756E+00	9.6400E+00
RHD	1.0114E+01	5.7954E+01	7.1740E+01
H	7.7285E-01	5.9230E-01	5.2552E-01
A	2.3830E+00	2.8483E+00	2.9859E+00
S	1.2445E+00	1.2945E+00	1.3215E+00
Z	1.0029E+00	1.0431E+00	1.0670E+00
GAME	8.8955E-01	8.6655E-01	8.6576E-01
U	6.6688E+00	1.1660E+00	1.0932E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.9859E-21	8.6163E-14	1.1110E-12
O	4.9550E-07	2.7019E-04	9.0808E-04
O+	7.8489E-27	4.7536E-19	1.8462E-17
O++	0.	9.1850E-78	6.4909E-69
O-	4.0674E-24	2.0469E-15	5.1274E-14
O2	8.5114E-04	1.7950E-02	3.3248E-02
O2+	1.7685E-18	1.2538E-13	1.8283E-12
O2-	5.2027E-22	3.7205E-14	6.6049E-13
C	9.9196E-25	3.2246E-16	1.0243E-14
C+	2.6106E-37	7.2700E-26	2.4574E-24
C++	1.3740E-49	2.2092E-63	2.4718E-56
C-	3.1825E-42	9.2412E-28	2.6502E-27
CU	6.2331E-04	3.5305E-02	6.6544E-02
CU+	3.2363E-24	3.6916E-17	1.0809E-15
CU2	9.9833E-01	9.4647E-01	8.9949E-01
C2	6.5099E-36	6.5188E-24	4.6956E-22

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.0970E-17	2.4703E-12	1.6844E-11
O	1.0245E-05	1.3520E-03	3.1487E-03
O+	1.3050E-25	6.5863E-17	1.4330E-15
O++	1.3114E-94	7.9182E-68	1.9926E-64
O-	3.2117E-20	1.3458E-13	1.6204E-12
O2	3.3197E-03	4.0360E-02	6.0561E-02
O2+	3.5037E-17	4.0741E-12	3.1176E-11
O2-	2.2806E-18	1.4723E-12	1.2761E-11
C	1.2048E-21	3.1022E-14	4.9977E-13
C+	1.9211E-32	4.1442E-23	4.2951E-21
C++	3.4442E-77	1.8395E-55	1.7557E-52
C-	4.4785E-45	7.3394E-25	1.1207E-22
CU	5.7723E-03	8.1228E-02	1.2345E-01
CU+	3.4938E-22	3.1333E-15	4.6886E-14
CU2	9.9090E-01	8.7706E-01	8.1284E-01
C2	1.4674E-30	2.9078E-21	1.8460E-19

P1 = 2.00E+03 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8481E+01	7.1895E+02	9.5600E+02
T	7.1642E+00	9.8290E+00	1.0471E+01
RHD	1.0842E+01	6.7848E+01	8.2330E+01
H	7.2479E-01	5.0195E-01	4.2676E-01
A	2.5184E+00	3.0285E+00	3.1742E+00
S	1.2750E+00	1.3355E+00	1.3643E+00
Z	1.0103E+00	1.0781E+00	1.1090E+00
GAME	8.7620E-01	8.6555E-01	8.6717E-01
U	7.3901E+00	1.1831E+00	1.1201E+00

P1 = 5.00E+03 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3805E+01	9.3674E+02	1.2249E+03
T	7.0570E+00	1.0632E+01	1.1270E+01
RHD	1.1003E+01	7.8548E+01	9.3635E+01
H	6.7210E-01	4.0214E-01	3.1751E-01
A	2.6414E+00	3.2165E+00	3.3750E+00
S	1.3000E+00	1.3776E+00	1.4082E+00
Z	1.0242E+00	1.1216E+00	1.1599E+00
GAME	8.6693E-01	8.6767E-01	8.7081E-01
U	8.1193E+00	1.2078E+00	1.1540E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.6047E-15	2.9054E-11	1.2850E-10
O	1.0142E-04	4.1446E-03	7.8713E-03
O+	5.0071E-21	3.1680E-15	3.3202E-14
O++	9.0457E-87	2.6411E-63	6.5945E-59
O-	2.5037E-17	3.0457E-12	2.0403E-11
O2	1.0038E-02	6.8666E-02	9.1243E-02
O2+	5.1072E-15	5.3529E-11	2.6135E-10
O2-	3.0301E-16	2.1525E-11	1.1310E-10
C	3.7130E-18	1.0218E-12	8.6470E-12
C+	4.1133E-29	1.2228E-20	3.3361E-19
C++	1.4101E-70	1.5382E-51	5.3095E-48
C-	3.0276E-31	3.2398E-22	1.0770E-20
CU	2.0030E-02	1.4066E-01	1.8904E-01
CU+	4.7709E-19	9.2956E-14	7.5000E-13
CU2	9.0905E-01	7.8653E-01	7.1140E-01
C2	0.0008E-27	4.6888E-19	1.0002E-17

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0000E-13	1.9488E-10	6.7000E-10
O	4.0773E-04	9.6215E-03	1.6242E-02
O+	3.0243E-19	6.2108E-14	4.3970E-13
O++	2.6575E-76	7.2471E-58	1.7467E-54
O-	1.1850E-15	3.3018E-11	1.5970E-10
O2	2.3009E-02	9.9165E-02	1.2197E-01
O2+	1.2683E-13	3.9243E-10	1.4794E-09
O2-	1.6603E-14	1.6588E-10	6.5113E-10
C	2.2494E-16	1.5072E-11	8.9537E-11
C+	2.3231E-20	7.8530E-19	1.1008E-17
C++	3.3315E-62	3.8272E-47	2.1407E-44
C-	2.2708E-28	2.5681E-20	4.4130E-19
CU	4.0048E-02	2.0717E-01	2.5943E-01
CU+	2.5472E-17	1.2824E-12	7.3130E-12
CU2	9.2900E-01	6.8403E-01	6.0232E-01
C2	1.7500E-25	2.1136E-17	2.6451E-16

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M, } US_1 = 2.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1004E+02	1.1978E+03	1.5404E+03
T	0.4297E+00	1.1417E+01	1.2093E+01
RHD	1.2529E+01	8.9464E+01	1.0501E+02
H	1.1414E+01	2.9306E-01	1.9770E-01
A	2.7600E+00	3.4158E+00	3.5910E+00
S	1.3304E+00	1.4207E+00	1.4535E+00
Z	1.0444E+00	1.1725E+00	1.2177E+00
GAME	0.0017E-01	8.7155E-01	8.7605E-01
U	0.0020E+00	1.2419E+00	1.1991E+00

SPECIES	MOLE FRACTIONS		
E-	1.2545E-12	9.2935E-10	2.8412E-09
O	1.5093E-03	1.8866E-02	2.9047E-02
O+	1.0004E-17	7.0887E-13	4.1563E-12
O++	3.0517E-72	1.0661E-53	1.1206E-50
U-	2.0509E-14	2.2754E-10	9.1947E-10
U2	4.1598E-02	1.2866E-01	1.4449E-01
O2+	1.3154E-12	2.0014E-09	6.5284E-09
O2-	2.3511E-13	8.5624E-10	2.8244E-09
C	7.4617E-15	1.3653E-10	6.8052E-10
C+	5.0095E-24	2.2946E-17	2.6537E-16
C++	7.0248E-59	9.7471E-44	2.8506E-41
C-	4.1408E-26	8.4720E-19	1.0974E-17
CU	0.3463E-02	2.7543E-01	3.2719E-01
CU+	7.1124E-16	1.0998E-11	2.5220E-11
CU2	8.7303E-01	5.7705E-01	4.9294E-01
C2	1.9301E-22	4.6377E-16	4.5220E-15

 $P_1 = 5.00E+03 \text{ N/SQ-M, } US_1 = 3.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4855E+02	1.8459E+03	2.3497E+03
T	9.4921E+00	1.3023E+01	1.3849E+01
RHD	1.4229E+01	1.0958E+02	1.2543E+02
H	4.8641E-01	4.7946E-02	-7.3930E-02
A	2.9470E+00	3.8577E+00	4.0846E+00
S	1.4038E+00	1.5095E+00	1.5470E+00
Z	1.1001E+00	1.2936E+00	1.3537E+00
GAME	8.6063E-01	8.8343E-01	8.9055E-01
U	1.0320E+01	1.3419E+00	1.3228E+00

SPECIES	MOLE FRACTIONS		
E-	3.4734E-11	1.2012E-08	3.3347E-08
O	6.9744E-03	5.3730E-02	7.8119E-02
O+	2.7225E-15	3.8646E-11	1.9923E-10
O++	2.7276E-64	2.7901E-47	1.7550E-44
O-	1.6018E-12	4.9751E-09	1.6948E-08
O2	8.4438E-02	1.7355E-01	1.8351E-01
O2+	4.4551E-11	2.7595E-08	7.8303E-08
O2-	8.1970E-12	1.1017E-08	2.9787E-08
C	7.0254E-13	5.0781E-09	2.2431E-08
C+	0.0030E-21	5.8457E-15	6.0004E-14
C++	1.1905E-52	2.1130E-38	4.5132E-36
C-	6.7189E-23	2.4489E-16	2.6084E-15
CU	1.7505E-01	4.0016E-01	4.4450E-01
CU+	5.6337E-14	3.7066E-10	1.5796E-09
CU2	7.3354E-01	3.7256E-01	2.9367E-01
C2	1.1403E-19	7.1351E-14	5.9049E-13

 $P_1 = 5.00E+03 \text{ N/SQ-M, } US_1 = 2.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2693E+02	1.5015E+03	1.9216E+03
T	8.9970E+00	1.2208E+01	1.2940E+01
RHD	1.3394E+01	9.9900E+01	1.1574E+02
H	5.5249E-01	1.7494E-01	6.7324E-02
A	2.0700E+00	3.6288E+00	3.8272E+00
S	1.3707E+00	1.4647E+00	1.4998E+00
Z	1.0094E+00	1.2311E+00	1.2844E+00
GAME	8.6047E-01	8.7690E-01	8.8205E-01
U	9.5869E+00	1.2863E+00	1.2540E+00

SPECIES	MOLE FRACTIONS		
E-	7.8967E-12	3.5589E-09	1.0270E-08
U	3.5405E-03	3.3107E-02	4.9679E-02
O+	3.0191E-16	5.6703E-12	3.1490E-11
O++	2.1882E-08	1.6054E-50	3.0390E-47
U-	2.6000E-13	1.1642E-09	4.2000E-09
U2	6.2200E-02	1.5431E-01	1.7091E-01
O2+	9.8540E-12	8.0224E-09	2.4104E-08
O2-	1.6980E-12	3.3743E-09	9.9015E-09
C	9.4705E-14	9.0049E-10	4.2245E-09
C+	2.0923E-22	3.9538E-16	4.5990E-15
C++	1.0302E-56	4.3570E-41	1.9529E-38
C-	2.7155E-24	1.5889E-17	1.9030E-16
CU	1.2712E-01	3.4101E-01	3.9081E-01
CU+	6.1955E-15	6.9263E-11	3.1310E-10
CU2	8.0714E-01	4.7158E-01	3.8001E-01
C2	6.0805E-21	6.3237E-15	5.8323E-14

 $P_1 = 5.00E+03 \text{ N/SQ-M, } US_1 = 3.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6953E+02	2.2280E+03	2.8277E+03
T	9.9613E+00	1.3878E+01	1.4804E+01
RHD	1.5001E+01	1.1784E+02	1.3349E+02
H	4.1536E-01	-8.7760E-02	-2.2567E-01
A	3.1212E+00	4.1046E+00	4.3650E+00
S	1.4378E+00	1.5549E+00	1.5947E+00
Z	1.1346E+00	1.3624E+00	1.4399E+00
GAME	8.6198E-01	8.9106E-01	8.9969E-01
U	1.1051E+01	1.4090E+00	1.4001E+00

SPECIES	MOLE FRACTIONS		
E-	1.2125E-10	3.6628E-08	1.0070E-07
O	1.2229E-02	8.2104E-02	1.1633E-01
O+	1.8384E-14	2.2515E-10	1.1500E-09
O++	1.1122E-00	1.9653E-44	2.4756E-41
O-	7.8278E-12	1.8204E-08	5.9190E-08
O2	1.0676E-01	1.8422E-01	1.8511E-01
O2+	1.5910E-10	8.3570E-08	2.2004E-07
O2-	3.0340E-11	3.0690E-08	7.7121E-08
C	4.0598E-12	2.4919E-08	1.1022E-07
C+	7.6414E-20	7.0371E-14	7.5174E-13
C++	1.5355E-49	5.5526E-36	1.7412E-33
C-	4.7668E-22	2.9568E-15	3.1312E-14
CU	2.2497E-01	4.4989E-01	4.8592E-01
CU+	3.0834E-13	1.7263E-09	7.2614E-09
CU2	0.5604E-01	2.8379E-01	2.1204E-01
C2	1.0095E-18	6.5685E-13	5.4691E-12

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1 = 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9187E+02	2.6438E+03	3.3536E+03
T	1.0416E+01	1.4788E+01	1.5857E+01
RHD	1.5706E+01	1.2449E+02	1.3973E+02
H	3.3974E-01	-2.3206E-01	-3.8845E-01
A	4.2492E+00	4.3712E+00	4.6730E+00
S	1.4725E+00	1.6004E+00	1.6429E+00
Z	1.1729E+00	1.4361E+00	1.5130E+00
GAME	8.6418E-01	8.9975E-01	9.1015E-01
U	1.1779E+01	1.4883E+00	1.4912E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.6212E-10	1.0367E-07	2.8609E-07
O	1.9762E-02	1.1925E-01	1.6490E-01
O+	9.7754E-14	1.1822E-09	6.1502E-09
O++	1.2400E-57	2.3193E-41	2.1520E-38
O-	2.9796E-11	5.8792E-08	1.8400E-07
O2	1.2799E-01	1.8471E-01	1.7471E-01
O2+	4.8368E-10	2.2847E-07	6.0724E-07
O2-	9.3190E-11	7.4447E-08	1.7419E-07
C	1.8540E-11	1.1178E-07	5.0349E-07
C+	7.4468E-19	7.6529E-13	8.5691E-12
C++	5.3350E-47	1.7007E-33	4.9729E-31
C-	1.0582E-20	3.0759E-14	3.2609E-13
CO	2.7499E-01	4.8807E-01	5.1373E-01
CO+	1.3339E-12	7.2616E-09	3.0894E-08
CO2	5.7726E-01	2.0797E-01	1.4607E-01
C2	9.8202E-18	5.3549E-12	4.5963E-11

P1 = 5.00E+03 N/SQ-M, US1 = 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4054E+02	3.5565E+03	4.5371E+03
T	1.1317E+01	1.6825E+01	1.8342E+01
RHD	1.6869E+01	1.3247E+02	1.4613E+02
H	1.7479E-01	-5.4596E-01	-7.4904E-01
A	3.5231E+00	4.9714E+00	5.3927E+00
S	1.5442E+00	1.6913E+00	1.7392E+00
Z	1.2600E+00	1.5957E+00	1.6927E+00
GAME	8.7046E-01	9.2055E-01	9.3666E-01
U	1.3227E+01	1.6867E+00	1.7260E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3938E-09	6.9118E-07	2.0339E-06
O	4.3732E-02	2.1907E-01	2.8704E-01
O+	1.9353E-12	2.4713E-08	1.4202E-07
O++	5.8632E-54	4.0957E-36	5.8321E-33
O-	2.8948E-10	4.3868E-07	1.3102E-06
O2	1.6299E-01	1.5453E-01	1.2245E-01
O2+	3.2575E-09	1.2999E-06	3.3016E-06
O2-	5.9365E-10	2.9741E-07	5.9395E-07
C	2.6917E-10	1.8383E-06	9.8056E-06
C+	5.4989E-17	6.7195E-11	1.0021E-09
C++	1.0063E-43	4.6096E-29	2.2601E-26
C-	8.4892E-19	2.1763E-12	2.7564E-11
CO	3.6901E-01	5.2758E-01	5.3140E-01
CO+	1.7503E-11	1.0254E-07	4.9345E-07
CO2	4.2428E-01	9.8011E-02	5.9105E-02
C2	4.3047E-16	2.6543E-10	2.9291E-09

P1 = 5.00E+03 N/SQ-M, US1 = 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1554E+02	3.0884E+03	3.9241E+03
T	1.0866E+01	1.5765E+01	1.7021E+01
RHD	1.6330E+01	1.2939E+02	1.4398E+02
H	2.5955E-01	-3.8483E-01	-5.6257E-01
A	3.3629E+00	4.6593E+00	5.0133E+00
S	1.5080E+00	1.6460E+00	1.6911E+00
Z	1.2147E+00	1.5141E+00	1.6012E+00
GAME	8.6704E-01	9.0951E-01	9.2219E-01
U	1.2205E+01	1.5805E+00	1.5972E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.6997E-10	2.7499E-07	7.7206E-07
O	3.0079E-02	1.6530E-01	2.2273E-01
O+	4.5718E-13	5.6284E-09	3.0150E-08
O++	3.9550E-55	1.3217E-38	1.2779E-35
O-	9.8287E-11	1.6924E-07	5.1301E-07
O2	1.4706E-01	1.7452E-01	1.5301E-01
O2+	1.3115E-09	5.6898E-07	1.4751E-06
O2-	2.4679E-10	1.5852E-07	3.4368E-07
C	7.4246E-11	4.6490E-07	2.2297E-06
C+	6.6672E-18	7.4578E-12	9.2205E-11
C++	5.2602E-45	3.3763E-31	1.1204E-28
C-	1.0156E-19	2.7470E-13	3.0650E-12
CO	3.2347E-01	5.1377E-01	5.2819E-01
CO+	5.0824E-12	2.8132E-08	1.2422E-07
CO2	4.9939E-01	1.4640E-01	9.6070E-02
C2	6.9209E-17	3.9117E-11	3.6456E-10

P1 = 5.00E+03 N/SQ-M, US1 = 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6685E+02	4.0419E+03	5.1881E+03
T	1.1775E+01	1.7996E+01	1.9909E+01
RHD	1.7318E+01	1.3370E+02	1.4600E+02
H	8.5477E-02	-7.1530E-01	-9.4818E-01
A	3.6706E+00	5.3120E+00	5.8206E+00
S	1.5809E+00	1.7361E+00	1.7809E+00
Z	1.3080E+00	1.6798E+00	1.7849E+00
GAME	8.7440E-01	9.3342E-01	9.5515E-01
U	1.3946E+01	1.8089E+00	1.8763E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.5041E-09	1.6761E-06	5.4598E-06
O	6.1294E-02	2.7792E-01	3.5287E-01
O+	7.2482E-12	1.0287E-07	6.6879E-07
O++	1.0974E-51	1.2720E-33	4.9239E-30
O-	7.7034E-10	1.0376E-06	3.1617E-06
O2	1.7485E-01	1.2703E-01	8.7112E-02
O2+	7.5004E-09	2.7410E-06	6.8092E-06
O2-	1.2880E-09	4.9320E-07	9.0211E-07
C	8.6017E-10	7.1700E-06	4.7280E-05
C+	3.5306E-16	6.0007E-10	1.2480E-06
C++	6.3534E-42	6.4163E-27	7.5092E-24
C-	5.4703E-18	1.6255E-11	2.6713E-10
CO	4.1032E-01	5.3146E-01	5.2653E-01
CO+	3.4721E-11	3.6241E-07	2.0182E-06
CO2	3.0354E-01	6.3571E-02	3.3422E-02
C2	2.2273E-15	1.7814E-09	2.6951E-08

TABLE I. - Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M, US1} = 4.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9447E+02	4.5371E+03	5.8766E+03
T	1.2246E+01	1.9333E+01	2.1916E+01
RHO	1.7678E+01	1.3303E+02	1.4326E+02
M	-8.3941E-03	-8.9267E-01	-1.1619E+00
A	3.8261E+00	5.6898E+00	6.3370E+00
S	1.6182E+00	1.7800E+00	1.8336E+00
Z	1.3602E+00	1.7641E+00	1.8717E+00
GAME	8.7884E-01	9.4923E-01	9.7910E-01
U	1.4662E+01	1.9509E+00	2.0624E+00

SPECIES	MOLE FRACTIONS		
E-	1.1998E-08	4.0447E-06	1.6446E-05
O	6.3318E-02	3.3809E-01	4.1305E-01
U+	2.5109E-11	4.1731E-07	3.2799E-06
O++	1.0662E-49	4.8500E-31	4.4855E-27
O-	1.8941E-09	2.2895E-06	7.5650E-06
O2	1.8183E-01	9.5291E-02	5.2255E-02
O2+	1.6244E-08	5.3523E-06	1.2681E-05
O2-	2.5779E-09	7.2720E-07	1.2310E-06
C	2.0902E-09	2.8942E-05	2.7394E-04
C+	2.0533E-15	5.6591E-09	1.9674E-07
C++	5.0234E-40	1.0791E-24	3.3351E-21
C-	3.1060E-17	1.2253E-10	3.2760E-09
CO	4.4632E-01	5.2812E-01	5.1717E-01
CO+	1.6020E-10	1.2863E-06	9.0886E-06
CO2	2.8853E-01	3.8456E-02	1.6590E-02
C2	1.0419E-14	1.2722E-08	3.3013E-07

 $P_1 = 5.00E+03 \text{ N/SQ-M, US1} = 4.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5356E+02	5.5190E+03	7.3362E+03
T	1.3245E+01	2.2991E+01	2.7464E+01
RHO	1.8131E+01	1.2551E+02	1.3409E+02
M	-2.0981E-01	-1.2703E+00	-1.6314E+00
A	4.1639E+00	6.6010E+00	7.2430E+00
S	1.6937E+00	1.8638E+00	1.9211E+00
Z	1.4723E+00	1.9126E+00	1.9906E+00
GAME	8.8910E-01	9.9096E-01	9.5890E-01
U	1.6082E+01	2.3261E+00	2.5131E+00

SPECIES	MOLE FRACTIONS		
E-	5.0547E-08	3.0051E-05	2.1764E-04
O	1.4227E-01	4.4142E-01	4.8449E-01
O+	2.6201E-10	7.0568E-06	5.3033E-05
O++	1.8085E-45	1.1480E-25	2.1122E-21
O-	9.4547E-09	1.0849E-05	4.8211E-05
O2	1.7882E-01	3.5902E-02	1.3095E-02
O2+	6.6874E-08	1.5287E-05	2.3970E-05
O2-	8.3414E-09	1.1938E-06	2.0906E-06
C	2.2114E-08	7.0398E-04	1.1348E-02
C+	5.8422E-14	8.3512E-07	4.6929E-05
C++	1.0707E-36	6.9557E-20	5.0704E-16
C-	7.7614E-16	1.1490E-08	7.8440E-07
CO	4.9931E-01	5.1138E-01	4.8717E-01
CO+	1.2073E-09	1.8927E-05	1.4480E-04
CO2	1.7960E-01	1.0515E-02	3.2890E-03
C2	1.9010E-13	1.2094E-06	7.1210E-05

 $P_1 = 5.00E+03 \text{ N/SQ-M, US1} = 4.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2337E+02	5.0329E+03	6.6010E+03
T	1.2734E+01	2.0942E+01	2.4623E+01
RHO	1.7948E+01	1.3031E+02	1.3815E+02
M	-1.0683E-01	-1.0778E+00	-1.3918E+00
A	3.9903E+00	6.1189E+00	6.8897E+00
S	1.6558E+00	1.8228E+00	1.8791E+00
Z	1.4148E+00	1.8442E+00	1.9406E+00
GAME	8.8375E-01	9.6945E-01	9.9331E-01
U	1.5374E+01	2.1201E+00	2.2920E+00

SPECIES	MOLE FRACTIONS		
E-	2.5068E-08	1.0295E-05	6.2050E-05
O	1.1024E-01	3.9470E-01	4.5932E-01
O+	8.2835E-11	1.7073E-06	1.6089E-05
O++	2.0006E-47	2.2253E-28	6.2397E-24
O-	4.3389E-09	4.9056E-06	1.9822E-05
O2	1.8327E-01	6.3280E-02	2.5539E-02
O2+	3.3096E-08	9.6120E-06	1.9734E-05
O2-	4.7995E-09	9.6585E-07	1.5809E-06
C	7.4424E-09	1.3043E-04	2.0475E-04
C+	1.1104E-14	6.2368E-08	4.0549E-06
C++	2.4503E-38	2.4148E-22	2.4437E-18
C-	1.6080E-16	1.0462E-09	5.9795E-08
CO	4.7616E-01	5.2054E-01	5.0585E-01
CO+	4.4740E-10	4.7859E-06	4.3637E-05
CO2	2.3033E-01	2.1312E-02	7.0715E-03
C2	4.5528E-14	1.0818E-07	5.9060E-06

 $P_1 = 5.00E+03 \text{ N/SQ-M, US1} = 4.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8500E+02	5.9926E+03	8.0454E+03
T	1.3781E+01	2.5489E+01	2.9509E+01
RHO	1.8230E+01	1.1980E+02	1.3353E+02
M	-3.1735E-01	-1.4700E+00	-1.8702E+00
A	4.3478E+00	7.0220E+00	7.4938E+00
S	1.7319E+00	1.9024E+00	1.9593E+00
Z	1.5325E+00	1.9625E+00	2.0407E+00
GAME	8.9510E-01	9.8576E-01	9.3063E-01
U	1.6747E+01	2.5577E+00	2.6512E+00

SPECIES	MOLE FRACTIONS		
E-	9.8817E-08	9.9156E-05	4.8969E-04
O	1.7924E-01	4.7211E-01	5.0079E-01
O+	8.0359E-10	2.5664E-05	1.0315E-04
O++	1.4749E-43	4.6776E-23	6.5013E-20
O-	1.9404E-08	2.5003E-05	8.7620E-05
O2	1.6850E-01	1.8388E-02	8.9762E-03
O2+	1.2777E-07	2.0144E-05	2.6152E-05
O2-	1.3547E-06	1.4590E-06	2.7067E-06
C	6.0905E-08	4.0391E-03	3.0036E-02
C+	2.9944E-13	1.0876E-05	1.8247E-04
C++	4.4221E-35	1.7574E-17	1.0601E-14
C-	3.5707E-15	1.4578E-07	3.7190E-06
CO	5.1366E-01	5.0031E-01	4.5670E-01
CO+	3.1945E-09	6.9078E-05	2.7217E-04
CO2	1.3660E-01	4.8882E-03	2.0375E-03
C2	7.7129E-13	1.4995E-05	2.8729E-04

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1749E+02	6.4727E+03	8.7414E+03
T	1.4351E+01	2.7805E+01	3.1137E+01
RHD	1.8247E+01	1.1615E+02	1.3383E+02
M	-4.2942E-01	-1.6783E+00	-2.1155E+00
A	4.5433E+00	7.2727E+00	7.7515E+00
S	1.7701E+00	1.9389E+00	1.9905E+00
Z	1.5951E+00	2.0042E+00	2.0978E+00
GAME	9.0173E-01	9.4913E-01	9.1989E-01
U	1.7487E+01	2.7523E+00	2.7864E+00

SPECIES	MOLE FRACTIONS	
E-	1.8812E-07	2.7087E-04
O	2.2057E-01	4.9013E-01
O+	4.4072E-09	6.2753E-05
O++	1.0789E-41	4.1474E-21
O-	3.7795E-08	5.0735E-05
O2	1.5277E-01	1.0832E-02
O2+	2.3575E-07	2.2564E-05
O2-	2.0552E-08	1.8236E-06
C	1.6618E-07	1.5166E-02
C+	1.5228E-12	7.0461E-05
C++	1.7214E-33	1.0615E-15
C-	1.5714E-14	1.0936E-06
CO	5.2556E-01	4.8047E-01
CO+	8.3114E-09	1.6874E-04
CO2	1.0110E-01	2.6508E-03
C2	3.0874E-12	1.0101E-04

P1 = 5.00E+03 N/SQ-M, US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8670E+02	7.4548E+03	1.0041E+04
T	1.5638E+01	3.0916E+01	3.3570E+01
RHD	1.8034E+01	1.1456E+02	1.3443E+02
M	-6.6716E-01	-2.1217E+00	-2.6214E+00
A	4.4788E+00	7.7304E+00	8.2744E+00
S	1.8462E+00	2.0092E+00	2.0649E+00
Z	1.7258E+00	2.1048E+00	2.2247E+00
GAME	9.1851E-01	9.1834E-01	9.1675E-01
U	1.8873E+01	2.9762E+00	2.9235E+00

SPECIES	MOLE FRACTIONS	
E-	6.4990E-07	8.6647E-04
O	3.1192E-01	5.1802E-01
O+	2.1144E-08	1.5827E-04
O++	3.2467E-38	5.0212E-19
O-	1.2508E-07	1.2190E-04
O2	1.0884E-01	6.5388E-03
O2+	7.3487E-07	2.5678E-05
O2-	3.8381E-08	2.7502E-06
C	1.2680E-06	5.5714E-02
C+	4.2016E-11	4.3480E-04
C++	2.1021E-30	7.0482E-14
C-	2.9113E-13	9.3402E-06
CO	5.2919E-01	4.1579E-01
CO+	5.7310E-08	3.8171E-04
CO2	4.9992E-02	1.3028E-03
C2	5.2284E-11	6.3136E-04

P1 = 5.00E+03 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5160E+02	6.9670E+03	9.4056E+03
T	1.4404E+01	2.9547E+01	3.2419E+01
RHD	1.8184E+01	1.1496E+02	1.3437E+02
M	-5.4605E-01	-1.8958E+00	-2.3640E+00
A	4.7523E+00	7.4959E+00	8.0103E+00
S	1.8082E+00	1.9742E+00	2.0329E+00
Z	1.6597E+00	2.0512E+00	2.1591E+00
GAME	9.0934E-01	9.2712E-01	9.1667E-01
U	1.8183E+01	2.8810E+00	2.8462E+00

SPECIES	MOLE FRACTIONS	
E-	3.5092E-07	5.3467E-04
O	2.6527E-01	5.0432E-01
O+	7.0941E-09	1.0815E-04
O++	5.4669E-40	6.9687E-20
O-	7.0155E-08	8.3915E-05
O2	1.3249E-01	7.9263E-03
O2+	4.2151E-07	2.4084E-05
O2-	2.9104E-08	2.2662E-06
C	4.5291E-07	3.3599E-02
C+	7.7412E-12	2.1304E-04
C++	5.5813E-32	1.3015E-14
C-	6.7037E-14	3.9467E-06
CO	5.2972E-01	4.5083E-01
CO+	2.1561E-08	2.7953E-04
CO2	7.2519E-02	1.7632E-03
C2	1.2369E-11	3.1331E-04

P1 = 5.00E+03 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2292E+02	7.9147E+03	1.0627E+04
T	1.6406E+01	3.2075E+01	3.4646E+01
RHD	1.7786E+01	1.1406E+02	1.3373E+02
M	-7.9278E-01	-2.3553E+00	-2.8857E+00
A	5.2300E+00	7.9703E+00	8.5442E+00
S	1.8838E+00	2.0445E+00	2.1007E+00
Z	1.7920E+00	2.1633E+00	2.2936E+00
GAME	9.3038E-01	9.1551E-01	9.1869E-01
U	1.5550E+01	3.0548E+00	2.9940E+00

SPECIES	MOLE FRACTIONS	
E-	1.2220E-06	1.2575E-03
O	3.5878E-01	5.3157E-01
O+	6.6150E-08	2.1433E-04
O++	6.6862E-36	2.3420E-18
O-	2.1893E-07	1.6375E-04
O2	8.3439E-02	5.7229E-03
O2+	1.2571E-06	2.7491E-05
O2-	4.7005E-06	3.2492E-06
C	3.8924E-06	7.9250E-02
C+	2.7001E-10	7.2743E-04
C++	1.8962E-28	2.5184E-13
C-	1.3637E-12	1.7514E-05
CO	5.2516E-01	3.7855E-01
CO+	1.6237E-07	4.7280E-04
CO2	3.2616E-02	1.0095E-03
C2	2.5373E-10	1.0085E-03

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M.} \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.0015E+02	8.3197E+03	1.1134E+04
T	1.7248E+01	3.3109E+01	3.5680E+01
RHD	1.7415E+01	1.1290E+02	1.3192E+02
H	-9.2266E-01	-2.5956E+00	-3.1578E+00
A	5.5192E+00	8.2134E+00	8.8201E+00
S	1.9207E+00	2.0801E+00	2.1443E+00
Z	1.8502E+00	2.2256E+00	2.3653E+00
GAME	9.4703E-01	9.1549E-01	9.2191E-01
U	2.0224E+01	3.1257E+00	3.0765E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4152E-06	1.7097E-03	2.9244E-03
O	4.0305E-01	5.4490E-01	5.7111E-01
U+	2.2143E-07	2.7853E-04	4.8212E-04
O++	4.3500E-34	8.6283E-18	1.4649E-10
O-	3.7409E-07	2.0879E-04	3.6712E-04
O2	3.7053E-02	5.1522E-03	4.7901E-03
O2+	2.1144E-06	2.9473E-05	3.9402E-05
O2-	2.3339E-08	3.7349E-06	6.1769E-06
C	1.3450E-05	1.0312E-01	1.5232E-01
C+	2.0530E-04	1.0893E-03	2.1338E-03
C++	1.0006E-26	7.1614E-13	5.7067E-12
C-	7.4950E-12	2.8509E-05	7.1511E-05
CO	5.1886E-01	3.4073E-01	2.6210E-01
CO+	5.0477E-07	5.5344E-04	7.4387E-04
CO2	1.9611E-02	7.9610E-04	5.3696E-04
C2	1.4713E-04	1.4007E-03	2.3411E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M.} \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3684E+02	8.8008E+03	1.1702E+04
T	2.0154E+01	3.4937E+01	3.7687E+01
RHD	1.6124E+01	1.0682E+02	1.2348E+02
H	-1.1960E+00	-3.0909E+00	-3.7187E+00
A	6.2902E+00	8.7047E+00	9.3900E+00
S	1.9909E+00	2.1535E+00	2.2219E+00
Z	1.9586E+00	2.3581E+00	2.5148E+00
GAME	1.0021E+00	9.1972E-01	9.3152E-01
U	2.1519E+01	3.2545E+00	3.2372E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5669E-05	2.8265E-03	4.6612E-03
O	4.7277E-01	5.7032E-01	5.9536E-01
O+	3.6553E-06	4.4015E-04	7.6601E-04
O++	1.0290E-28	7.5713E-17	1.2298E-15
O-	1.3068E-06	3.0323E-04	5.0438E-04
O2	1.6867E-02	4.2821E-03	3.9415E-03
O2+	5.1418E-06	3.3441E-05	4.5098E-05
O2-	5.8349E-08	4.4941E-06	7.0019E-06
C	3.0374E-04	1.4968E-01	1.9761E-01
C+	3.6570E-07	2.0369E-03	3.6313E-03
C++	1.0807E-21	3.8887E-12	2.7468E-11
C-	6.7740E-10	5.7936E-05	1.2333E-04
CO	5.0533E-01	2.6675E-01	1.8911E-01
CO+	7.9725E-06	6.8166E-04	8.5099E-04
CO2	4.0278E-03	4.9234E-04	3.0825E-04
C2	1.6764E-07	2.0837E-03	2.8187E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M.} \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9822E+02	8.6294E+03	1.1514E+04
T	1.8520E+01	3.4057E+01	3.6696E+01
RHD	1.6875E+01	1.1061E+02	1.2801E+02
H	-1.0573E+00	-2.8414E+00	-3.4373E+00
A	5.6695E+00	8.4586E+00	9.1059E+00
S	1.9566E+00	2.1164E+00	2.1828E+00
Z	1.9141E+00	2.2908E+00	2.4396E+00
GAME	9.7183E-01	9.1707E-01	9.2622E-01
U	2.0866E+01	3.1919E+00	3.1624E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.4323E-06	2.2295E-03	3.7353E-03
O	4.4323E-01	5.5786E-01	5.8304E-01
O+	8.4342E-07	3.5306E-04	6.1024E-04
O++	2.0051E-31	2.7157E-17	4.4000E-16
O-	6.7438E-07	2.5588E-04	4.3582E-04
O2	3.4551E-02	4.6935E-03	4.3927E-03
O2+	3.4539E-06	3.1505E-05	4.2624E-05
O2-	5.6448E-08	4.1659E-06	6.7184E-06
C	5.9149E-05	1.2672E-01	1.5770E-01
C+	2.2210E-04	1.5237E-03	2.8103E-03
C++	2.7919E-24	1.7586E-12	1.2847E-11
C-	5.5580E-11	4.2141E-05	9.6230E-05
CO	5.1176E-01	3.0326E-01	2.2427E-01
CO+	1.8437E-06	6.2342E-04	8.0486E-04
CO2	1.3381E-02	6.2884E-04	4.1272E-04
C2	1.2242E-06	1.7700E-03	2.6376E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M.} \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7619E+02	8.8969E+03	1.1795E+04
T	2.2213E+01	3.5791E+01	3.8715E+01
RHD	1.5323E+01	1.0241E+02	1.1758E+02
H	-1.3390E+00	-3.3451E+00	-4.0060E+00
A	6.6325E+00	8.9561E+00	9.7003E+00
S	2.0229E+00	2.1910E+00	2.2615E+00
Z	1.9866E+00	2.4273E+00	2.5910E+00
GAME	9.9084E-01	9.2329E-01	9.3805E-01
U	2.2137E+01	3.3175E+00	3.3160E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.5812E-05	3.5208E-03	5.7955E-03
O	4.8937E-01	5.8217E-01	6.0611E-01
O+	1.4160E-05	5.4453E-04	9.7097E-04
O++	1.1317E-25	1.9905E-16	3.4298E-15
O-	3.2611E-06	3.5173E-04	5.7506E-04
O2	7.4148E-03	3.9056E-03	3.5914E-03
O2+	6.3127E-06	3.5405E-05	4.8884E-05
O2-	6.4542E-08	4.7444E-06	7.2587E-06
C	2.5492E-03	1.7181E-01	2.1850E-01
C+	6.3005E-06	2.6433E-03	4.6276E-03
C++	4.4961E-19	8.1105E-12	5.8063E-11
C-	1.1145E-08	7.5844E-05	1.5321E-04
CO	4.9863E-01	2.3150E-01	1.5562E-01
CO+	3.2375E-03	7.2963E-04	8.8409E-04
CO2	1.9165E-02	3.8065E-04	2.2300E-04
C2	2.8274E-06	2.3275E-03	2.8833E-03

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 6.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1738E+02	9.1547E+03	1.2117E+04
T	2.4024E+01	3.6726E+01	3.9927E+01
RHO	1.4841E+01	9.9766E+01	1.1371E+02
M	-1.4868E+00	-3.6109E+00	-4.3098E+00
A	6.7749E+00	9.2282E+00	1.0043E+01
S	2.0529E+00	2.2278E+00	2.3003E+00
Z	2.0116E+00	2.4985E+00	2.6687E+00
GAME	9.4455E-01	9.2805E-01	9.4649E-01
U	2.2776E+01	3.3934E+00	3.4110E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6034E-04	4.3557E-03	7.2656E-03
O	4.9849E-01	5.9338E-01	6.1584E-01
O+	3.4501E-05	6.7861E-04	1.2567E-03
O++	1.1290E-23	5.4484E-16	1.0720E-14
O-	6.8208E-06	4.0936E-04	6.6371E-04
O2-	4.0339E-03	3.5923E-03	3.2247E-03
O2+	6.5734E-06	3.8077E-05	5.3286E-05
O2++	7.8011E-08	5.0797E-06	7.5535E-06
C-	1.0579E-02	1.9310E-01	2.3781E-01
C+	4.5427E-05	3.3769E-03	5.9049E-03
C++	3.5163E-17	1.7003E-11	1.3047E-10
C-	9.7133E-06	9.7701E-05	1.8986E-04
CO	4.8515E-01	1.9738E-01	1.2347E-01
CO+	8.0835E-05	7.7430E-04	9.1178E-04
CO2	9.8811E-04	2.9180E-04	1.5573E-04
C2	2.2271E-05	2.5168E-03	2.8544E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0644E+02	1.0222E+04	1.3566E+04
T	2.6243E+01	3.8999E+01	4.3273E+01
RHO	1.4734E+01	9.9063E+01	1.1092E+02
M	-1.7972E+00	-4.1841E+00	-4.9803E+00
A	7.0510E+00	9.8598E+00	1.0897E+01
S	2.1104E+00	2.2990E+00	2.3767E+00
Z	2.0816E+00	2.6460E+00	2.8205E+00
GAME	9.0860E-01	9.4210E-01	9.7087E-01
U	2.4144E+01	3.5975E+00	3.6491E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.2472E-04	6.6980E-03	1.2154E-02
O	5.1702E-01	6.1344E-01	6.3079E-01
O+	1.4008E-05	1.1043E-03	2.3674E-03
O++	1.1503E-21	5.1191E-15	1.7971E-13
O-	1.0020E-05	5.6625E-04	9.2018E-04
O2-	2.3164E-03	3.0639E-03	2.5061E-03
O2+	6.0076E-06	4.6323E-05	6.7704E-05
O2++	1.1635E-07	6.0495E-06	8.3646E-06
C-	4.1040E-02	2.3244E-01	2.7015E-01
C+	2.8005E-04	5.4234E-03	9.9481E-03
C++	2.1542E-15	8.2660E-11	8.8009E-10
C-	9.1814E-07	1.5854E-04	2.9372E-04
CO	4.3790E-01	1.3335E-01	6.7747E-02
CO+	1.7619E-04	8.5480E-04	9.4262E-04
CO2	4.5121E-04	1.6081E-04	8.2531E-05
C2	1.5500E-04	2.6919E-03	2.4571E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.6095E+02	9.6279E+03	1.2751E+04
T	2.5318E+01	3.7796E+01	4.1438E+01
RHO	1.4707E+01	9.9050E+01	1.1196E+02
M	-1.6395E+00	-3.8916E+00	-4.6389E+00
A	6.4035E+00	9.5296E+00	1.0443E+01
S	2.0819E+00	2.2637E+00	2.3388E+00
Z	2.0437E+00	2.5717E+00	2.7444E+00
GAME	9.2106E-01	9.3427E-01	9.5753E-01
U	2.3450E+01	3.4857E+00	3.5457E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.2283E-04	5.3914E-03	9.2941E-03
O	5.0772E-01	6.0387E-01	6.2432E-01
O+	5.7150E-05	8.5870E-04	1.6911E-03
O++	1.7649E-22	1.6105E-15	4.0355E-14
O-	1.1461E-05	4.8103E-04	7.7894E-04
O2-	2.8527E-03	3.3243E-03	2.8715E-03
O2+	6.5841E-06	4.1756E-05	5.9587E-05
O2++	9.6023E-08	5.5414E-06	7.9784E-06
C-	2.4344E-02	2.1346E-01	2.5545E-01
C+	1.3927E-04	4.2853E-03	7.6332E-03
C++	4.2328E-16	3.6849E-11	3.2544E-10
C-	3.7483E-07	1.2518E-04	2.3689E-04
CO	4.6368E-01	1.6447E-01	9.3900E-02
CO+	1.3178E-04	8.1737E-04	9.3398E-04
CO2	6.5383E-04	2.2002E-04	1.0260E-04
C2	7.3896E-05	2.6470E-03	2.7197E-03

 $P_1 = 5.00E+03 \text{ N/SQ-M}, \quad U_{S1} = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5350E+02	1.0886E+04	1.4498E+04
T	2.7079E+01	4.0356E+01	4.5508E+01
RHO	1.4844E+01	9.9170E+01	1.0983E+02
M	-1.9555E+00	-4.4867E+00	-5.3523E+00
A	7.2006E+00	1.0221E+01	1.1401E+01
S	2.1387E+00	2.3340E+00	2.4143E+00
Z	2.1234E+00	2.7201E+00	2.9006E+00
GAME	9.0320E-01	9.5178E-01	9.8472E-01
U	2.4847E+01	3.7245E+00	3.8806E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.5470E-04	8.3881E-03	1.6314E-02
O	5.2602E-01	6.2181E-01	6.3440E-01
O+	1.0285E-04	1.4482E-03	3.4026E-03
O++	4.0575E-21	1.7550E-14	9.5704E-13
O-	2.2784E-05	6.6546E-04	1.0875E-03
O2-	2.0102E-03	2.7912E-03	2.1228E-03
O2+	6.8233E-06	5.1790E-05	7.8067E-05
O2++	1.3843E-07	6.5386E-06	8.5754E-06
C-	5.4903E-02	2.4959E-01	2.8069E-01
C+	4.5908E-04	6.8752E-03	1.3297E-02
C++	7.0619E-15	1.9324E-10	2.7600E-09
C-	1.7691E-06	1.9808E-04	3.5914E-04
CO	4.1009E-01	1.0454E-01	4.5134E-02
CO+	2.1465E-04	8.8304E-04	9.3155E-04
CO2	3.9248E-04	1.1235E-04	3.4551E-05
C2	2.5712E-04	2.6330E-03	2.0764E-03

TABLE I. - Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.0217E+02	1.1591F+04	1.5514E+04
T	2.7777E+01	4.1909E+01	4.8170E+01
RHO	1.4484E+01	9.9037E+01	1.0852E+02
H	-2.1264E+00	-4.7982E+00	-5.7358E+00
A	7.3659E+00	1.0619E+01	1.1923E+01
S	2.1674E+00	2.3685E+00	2.4512E+00
Z	2.1681E+00	2.7926F+00	2.9678E+00
GAME	9.0090E-01	9.6340E-01	9.9432E-01
U	2.5552E+01	3.8705E+00	4.0878E+00

SPECIES	MOLE FRACTIONS		
E-	1.0234E-03	1.0639E-02	2.2324E-02
O	5.3634E-01	6.2860E-01	6.3415E-01
O+	1.2700E-04	1.9463E-03	5.2431E-03
U+	1.5241E-20	6.6234E-14	5.8250E-12
O-	2.9374E-05	7.7974F-04	1.2749E-03
O2	1.8215E-03	2.4973E-03	1.7405E-03
O2+	7.0677E-06	5.8273E-05	9.0603E-05
O2-	1.6211E-07	6.9482E-06	8.5284E-06
C	1.7634E-02	2.6435E-01	2.8578E-01
C+	6.7252E-04	8.7667E-03	1.7603E-02
C+	1.8505E-14	4.7766E-10	9.2177E-09
C-	2.9010E-06	2.4393E-04	4.2627E-04
CO	3.0139E-01	7.8672E-02	2.8597E-02
CO+	2.4667E-04	8.9875E-04	8.9842E-04
CO2	3.2333E-04	7.3977E-05	1.7439E-05
C2	3.7229E-04	2.4620E-03	1.6257E-03

P1 = 5.00E+03 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0036E+03	1.3069E+04	1.7719E+04
T	2.9021E+01	4.5808E+01	5.4254E+01
RHO	1.5274E+01	9.7521E+01	1.0602E+02
H	-2.4741E+00	-5.4457E+00	-6.5451E+00
A	7.6933E+00	1.1509E+01	1.2856E+01
S	2.2244E+00	2.4357E+00	2.5219E+00
Z	2.2642E+00	2.9255F+00	3.0805E+00
GAME	9.0077E-01	9.8839E-01	9.8894E-01
U	2.6972E+01	4.2299E+00	4.5354E+00

SPECIES	MOLE FRACTIONS		
E-	1.6518E-03	1.7983E-02	4.0467E-02
O	5.5568E-01	6.3535E-01	6.2124E-01
O+	1.8526E-04	3.8335E-03	1.1790E-02
O++	1.1075E-19	1.3153E-12	1.9291E-10
O-	4.4654E-05	1.0546E-03	1.6403E-03
O2	1.5703E-03	1.8606E-03	1.1457E-03
O2+	7.7476E-06	7.5005E-05	1.1970E-04
O2-	2.1414E-07	7.3048E-06	7.7963E-06
C	1.1500E-01	2.8355E-01	2.8016E-01
C+	1.2031E-03	1.4606E-02	2.9959E-02
C++	8.8186E-14	3.5632E-09	9.2317E-08
C-	6.4988E-06	3.5130E-04	5.4264E-04
CO	3.2349E-01	3.8593E-02	1.1239E-02
CO+	3.0706E-04	8.8148E-04	7.8934E-04
CO2	2.2859E-04	2.5770E-05	4.1843E-06
C2	6.1703E-04	1.8351E-03	8.9387E-04

P1 = 5.00E+03 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5220E+02	1.2322E+04	1.6594E+04
T	2.8416E+01	4.3734E+01	5.1158E+01
RHO	1.5127E+01	9.8424E+01	1.0715E+02
H	-2.2980E+00	-5.1180E+00	-6.1348E+00
A	7.5281E+00	1.1057E+01	1.2415E+01
S	2.1957E+00	2.4029E+00	2.4872E+00
Z	2.2152E+00	2.8626E+00	3.0272E+00
GAME	9.0032E-01	9.7652E-01	9.9519E-01
U	2.6262E+01	4.0386E+00	4.3123E+00

SPECIES	MOLE FRACTIONS		
E-	1.3200E-03	1.3766E-02	3.0475E-02
O	5.4006E-01	6.3337E-01	6.2958E-01
O+	1.5477E-04	2.7040E-03	7.9825E-03
O++	4.2946E-20	2.8417E-13	3.5904E-11
O-	3.6645E-05	9.1123E-04	1.4660E-03
O2	1.6831E-03	2.1781E-03	1.4113E-03
O2+	7.3786E-06	6.6031E-05	1.0489E-04
O2-	1.8737E-07	7.2151E-06	8.2370E-06
C	9.6362E-02	2.7608E-01	2.8517E-01
C+	9.1999E-04	1.1312E-02	2.3506E-02
C+	4.2305E-14	1.2777E-09	3.0645E-08
C-	4.5266E-06	2.9618E-04	4.9220E-04
CO	3.5241E-01	5.6185E-02	1.7724E-02
CO+	2.7925E-04	8.9850E-04	8.4795E-04
CO2	2.7087E-04	4.5011E-05	8.4406E-06
C2	4.9413E-04	2.1812E-03	1.2219E-03

P1 = 5.00E+03 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0503E+03	1.3826E+04	1.8874E+04
T	2.9606E+01	4.8187E+01	5.7293E+01
RHO	1.5414E+01	9.6201E+01	1.0524E+02
H	-2.6549E+00	-5.7811E+00	-6.9640E+00
A	7.8021E+00	1.1962E+01	1.3259E+01
S	2.2533E+00	2.4681E+00	2.5552E+00
Z	2.3148E+00	2.9826E+00	3.1303E+00
GAME	9.0195E-01	9.9567E-01	9.8032E-01
U	2.7601E+01	4.4410E+00	4.7463E+00

SPECIES	MOLE FRACTIONS		
E-	2.0235E-03	2.3758E-02	5.1701E-02
O	5.6514E-01	6.3416E-01	6.1016E-01
O+	2.2000E-04	5.5536E-03	1.6603E-02
O++	2.7032E-19	6.5811E-12	8.4508E-10
O-	5.3468E-05	1.2076E-03	1.7857E-03
O2	1.4883E-03	1.5529F-03	9.4422E-04
O2+	8.1707E-06	8.5362E-05	1.3419E-04
O2-	2.4231E-07	7.1900E-06	7.2973E-06
C	1.3340E-01	2.8657E-01	2.7263E-01
C+	1.5254E-03	1.8893E-02	3.6603E-02
C++	1.7336E-13	1.0395E-08	2.4163E-07
C-	6.9132E-06	4.0678E-04	5.7041E-04
CO	2.9487E-01	2.5477E-02	7.4608E-03
CO+	3.3249E-04	8.4779E-04	7.2974E-04
CO2	1.9324E-04	1.3821E-05	2.2119E-06
C2	7.3622E-04	1.4629E-03	6.5606E-04

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1 = 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1104E+03	1.4593E+04	2.0050E+04
T	3.0184E+01	5.0761E+01	6.0206E+01
RHD	1.5542E+01	9.4774E+01	1.0477E+02
M	-2.8402E+00	-6.1243E+00	-7.3905E+00
A	8.0352E+00	1.2383E+01	1.3641E+01
S	2.2824E+00	2.4996E+00	2.5874E+00
Z	2.3670E+00	3.0334E+00	3.1787E+00
GAME	9.0371E-01	9.9586E-01	9.7223E-01
U	2.8389E+01	4.6618E+00	4.9427E+00

SPECIES	MOLE FRACTIONS		
E-	2.4414E-03	3.1156E-02	6.3640E-02
O	5.7438E-01	6.2969E-01	5.9724E-01
O+	2.6016E-04	8.0161E-03	2.2491E-02
O++	6.3615E-19	3.2036E-11	3.0264E-09
D-	6.3165E-05	1.3582E-03	1.8992E-03
D2-	1.4117E-03	1.2840E-03	7.9107E-04
D2+	8.6466E-06	9.6438E-05	1.4745E-04
D2++	2.7173E-07	6.9148E-06	6.7869E-06
G-	1.5145E-01	2.8526E-01	2.6397E-01
G+	1.8921E-03	2.4062E-02	4.3049E-02
G++	3.2744E-13	2.9586E-08	5.5224E-07
C-	1.1809E-05	4.5657E-04	5.9485E-04
C0	2.6671E-01	1.6682E-02	5.1919E-03
C0+	3.5572E-04	8.0264E-04	6.7234E-04
C02	1.6296E-04	7.2697E-06	1.2482E-06
C2	8.4752E-04	1.1254E-03	4.8781E-04

P1 = 5.00E+03 N/SQ-M, US1 = 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1658E+03	1.5371E+04	2.1241E+04
T	3.0762E+01	5.3404E+01	6.3000E+01
RHD	1.5656E+01	9.3457E+01	1.0448E+02
M	-3.0300E+00	-6.4755E+00	-7.8242E+00
A	8.2136E+00	1.2764E+01	1.4011E+01
S	2.3117E+00	2.5302E+00	2.6189E+00
Z	2.4206E+00	3.0798E+00	3.2271E+00
GAME	9.0600E-01	9.9062E-01	9.6556E-01
U	2.9096E+01	4.8808E+00	5.1249E+00

SPECIES	MOLE FRACTIONS		
E-	2.9144E-03	3.9978E-02	7.6096E-02
O	5.8336E-01	6.2235E-01	5.8295E-01
O+	3.0722E-04	1.1295E-02	2.8771E-02
O++	1.4656E-18	1.3998E-10	9.2234E-09
D-	7.3835E-05	1.4952E-03	1.9822E-03
D2-	1.3418E-03	1.0650E-03	6.7096E-04
D2+	9.1762E-06	1.0820E-04	1.5921E-04
D2++	3.0218E-07	6.5458E-06	6.2588E-06
G-	1.6906E-01	2.8064E-01	2.5490E-01
G+	2.3105E-03	2.9821E-02	4.9135E-02
G++	6.0264E-13	7.7916E-08	1.1317E-06
C-	1.5228E-05	4.9627E-04	6.0056E-04
C0	2.3915E-01	1.1127E-02	3.7504E-03
C0+	3.7685E-04	7.5216E-04	6.1705E-04
C02	1.3660E-04	3.9036E-06	7.4200E-07
C2	9.4714E-04	8.5310E-04	3.6722E-04

P1 = 5.00E+03 N/SQ-M, US1 = 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2224E+03	1.6161E+04	2.2440E+04
T	3.1351E+01	5.6018E+01	6.5625E+01
RHD	1.5752E+01	9.2348E+01	1.0442E+02
M	-3.2244E+00	-6.8351E+00	-8.2655E+00
A	8.3981E+00	1.3117E+01	1.4367E+01
S	2.3412E+00	2.5599E+00	2.6488E+00
Z	2.4753E+00	3.1240E+00	3.2748E+00
GAME	9.0883E-01	9.8223E-01	9.6050E-01
U	2.9801E+01	5.0903E+00	5.2958E+00

SPECIES	MOLE FRACTIONS		
E-	3.4543E-03	4.9869E-02	8.8464E-02
O	5.9204E-01	6.1281E-01	5.6805E-01
O+	3.6315E-04	1.5372E-02	3.5747E-02
O++	3.3477E-18	5.2688E-10	2.4042E-08
D-	8.5588E-05	1.6119E-03	2.0378E-03
D2-	1.2751E-03	8.9246E-04	5.7701E-04
D2+	9.7629E-06	1.1946E-04	1.6915E-04
D2++	3.3334E-07	6.1378E-06	5.7947E-06
C-	1.8614E-01	2.7395E-01	2.4607E-01
C+	2.7907E-03	3.5819E-02	5.4617E-02
C++	1.0928E-12	1.8513E-07	2.0916E-06
C-	1.9221E-05	5.2423E-04	5.9086E-04
C0	2.1229E-01	7.6695E-03	2.8124E-03
C0+	3.9583E-04	7.0080E-04	5.6753E-04
C02	1.1341E-04	2.1894E-06	4.6766E-07
C2	1.0316E-03	6.4693E-04	2.8173E-04

P1 = 5.00E+03 N/SQ-M, US1 = 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2603E+03	1.6959E+04	2.3637E+04
T	3.1954E+01	5.8555E+01	6.8194E+01
RHD	1.5627E+01	9.1440E+01	1.0427E+02
M	-3.4234E+00	-7.2030E+00	-8.7134E+00
A	8.5903E+00	1.3453E+01	1.4740E+01
S	2.3708E+00	2.5890E+00	2.6790E+00
Z	2.5311E+00	3.1673E+00	3.3241E+00
GAME	9.1225E-01	9.7588E-01	9.5607E-01
U	3.0504E+01	5.2875E+00	5.4535E+00

SPECIES	MOLE FRACTIONS		
E-	4.0771E-03	6.0490E-02	1.0118E-01
O	6.0037E-01	6.0164E-01	5.5217E-01
O+	4.3068E-04	2.0186E-02	4.3412E-02
O++	7.6610E-18	1.7047E-09	5.7190E-08
D-	9.8559E-05	1.7060E-03	2.0605E-03
D2-	1.2093E-03	7.5680E-04	4.9754E-04
D2+	1.0412E-05	1.2998E-04	1.7730E-04
D2++	3.6083E-07	5.7209E-06	5.3062E-06
C-	2.0261E-01	2.6615E-01	2.3747E-01
C+	3.3462E-03	4.1775E-02	5.9727E-02
C++	1.9700E-12	3.9701E-07	3.6407E-06
C-	2.3846E-05	5.4097E-04	5.8511E-04
C0	1.8023E-01	5.4748E-03	2.1454E-03
C0+	4.1257E-04	6.5076E-04	5.1923E-04
C02	9.2925E-05	1.2892E-06	3.0150E-07
C2	1.0975E-03	4.9436E-04	2.1712E-04

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/SQ-M, } U_{S1} = 9.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3394E+03	1.7759E+04	2.4833E+04
T	3.2546E+01	6.0998E+01	7.0677E+01
RHO	1.5679E+01	9.0678E+01	1.0414E+02
H	-3.6266E+00	-7.5791E+00	-9.1710E+00
A	8.7918E+00	1.3779E+01	1.5083E+01
S	2.4003E+00	2.6176E+00	2.7080E+00
Z	2.5878E+00	3.2168E+00	3.3740E+00
GAME	9.1637E-01	9.6949E-01	5.5394E-01
U	3.1205E+01	5.4726E+00	5.6133E+00

SPECIES	MOLE FRACTIONS		
E-	4.4054E-03	7.1588E-02	1.1590E-01
J	6.0829E-01	5.8924E-01	5.3578E-01
O+	5.1368E-04	2.5662E-02	5.1354E-02
O++	1.7735E-17	4.8197E-09	1.2433E-07
O-	1.1292E-04	1.7775E-03	2.0760E-03
U2	1.1423E-03	6.4849E-04	4.3092E-04
O2+	1.1131E-05	1.3946E-04	1.8353E-04
O2-	3.9009E-07	5.3075E-06	4.8349E-06
C	2.1839E-01	2.5786E-01	2.2685E-01
C+	3.9902E-03	4.7513E-02	6.4350E-02
C++	3.5033E-12	7.7762E-07	5.9732E-06
C-	2.4108E-05	5.4794E-04	5.6773E-04
CO	1.6107E-01	4.0323E-03	1.6674E-03
CO+	4.2687E-04	5.0286E-04	4.7409E-04
CO2	7.4480E-05	7.9350E-07	1.9990E-07
C2	1.1418E-03	3.8145E-04	1.6880E-04

 $P_1 = 5.00E+03 \text{ N/SQ-M, } U_{S1} = 9.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4611E+03	1.9333E+04	2.7155E+04
T	3.4010E+01	6.5615E+01	7.5438E+01
RHO	1.5897E+01	8.9305E+01	1.0354E+02
H	-4.0473E+00	-8.3548E+00	-1.0110E+01
A	9.2328E+00	1.4417E+01	1.5790E+01
S	2.4601E+00	2.6735E+00	2.7660E+00
Z	2.7024E+00	3.2993E+00	3.4786E+00
GAME	9.2747E-01	9.6014E-01	9.5135E-01
U	3.2594E+01	5.8108E+00	5.9117E+00

SPECIES	MOLE FRACTIONS		
E-	6.7252E-03	9.4596E-02	1.3527E-01
O	6.2265E-01	5.6186E-01	5.0169E-01
O+	7.5249E-04	3.8315E-02	6.8884E-02
O++	1.0701E-16	2.7876E-08	4.7762E-07
O-	1.4674E-04	1.8580E-03	2.0350E-03
O2	9.9854E-04	4.8662E-04	3.2443E-04
O2+	1.2832E-05	1.5460E-04	1.9307E-04
O2-	4.5488E-07	4.5045E-06	3.9319E-06
C	2.4736E-01	2.4108E-01	2.1300E-01
C+	5.7025E-03	5.8009E-02	7.2331E-02
C++	1.2363E-11	2.4051E-06	1.4100E-05
C-	4.2255E-05	5.3909E-04	5.2123E-04
CO	1.1397E-01	2.3505E-03	1.0444E-03
CO+	4.4688E-04	5.1408E-04	3.9235E-04
CO2	4.5051E-05	3.3331E-07	9.2767E-06
C2	1.1539E-03	2.3320E-04	1.0408E-04

 $P_1 = 5.00E+03 \text{ N/SQ-M, } U_{S1} = 9.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3997E+03	1.8554E+04	2.6009E+04
T	3.3275E+01	6.3349E+01	7.3085E+01
RHO	1.5904E+01	8.9990E+01	1.0391E+02
H	-3.8348E+00	-7.9631E+00	-9.6308E+00
A	9.0050E+00	1.4100E+01	1.5439E+01
S	2.4303E+00	2.6457E+00	2.7377E+00
Z	2.6450E+00	3.2547E+00	3.4247E+00
GAME	9.2136E-01	9.6426E-01	9.5222E-01
U	3.1901E+01	5.6463E+00	5.7643E+00

SPECIES	MOLE FRACTIONS		
E-	5.6723E-03	8.2995E-02	1.2656E-01
O	6.1575E-01	5.7592E-01	5.1900E-01
O+	6.1802E-04	3.1728E-02	6.0039E-02
O++	4.2588E-17	1.2160E-08	2.5105E-07
O-	1.2488E-04	1.8277E-03	2.0649E-03
O2	1.0725E-03	5.6017E-04	3.7394E-04
O2+	1.1932E-05	1.4772E-04	1.8770E-04
O2-	4.2642E-07	4.9017E-06	4.3758E-06
C	2.3335E-01	2.4943E-01	2.2077E-01
C+	4.7685E-03	5.2938E-02	6.8531E-02
C++	6.5536E-12	1.4115E-06	9.3531E-06
C-	3.5272E-05	5.4681E-04	5.4607E-04
CO	1.3693E-01	3.0472E-03	1.3133E-03
CO+	4.3845E-04	5.5731E-04	4.3185E-04
CO2	5.6909E-05	5.0670E-07	1.3524E-07
C2	1.1615E-03	2.9706E-04	1.3226E-04

 $P_1 = 5.00E+03 \text{ N/SQ-M, } U_{S1} = 9.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5237E+03	2.0084E+04	2.8252E+04
T	3.4823E+01	6.7803E+01	7.7762E+01
RHO	1.5854E+01	8.8557E+01	1.0293E+02
H	-4.2642E+00	-8.7537E+00	-1.0591E+01
A	9.4794E+00	1.4732E+01	1.6159E+01
S	2.4698E+00	2.7011E+00	2.7927E+00
Z	2.7597E+00	3.3449E+00	3.5301E+00
GAME	9.3503E-01	9.5702E-01	9.5118E-01
U	3.3282E+01	5.9675E+00	6.0588E+00

SPECIES	MOLE FRACTIONS		
E-	8.0348E-03	1.0632E-01	1.5203E-01
O	6.2886E-01	5.4721E-01	4.8434E-01
O+	9.5087E-04	4.5361E-02	7.8095E-02
O++	2.8446E-16	5.8974E-08	8.6844E-07
O-	1.6685E-04	1.8697E-03	1.9870E-03
O2	9.1923E-04	4.2418E-04	2.8057E-04
O2+	1.3851E-05	1.6001E-04	1.9030E-04
O2-	4.8025E-07	4.1159E-06	3.4488E-06
C	2.6020E-01	2.3290E-01	2.0542E-01
C+	6.8560E-03	6.2717E-02	7.5834E-02
C++	2.4157E-11	3.8891E-06	2.0670E-05
C-	5.0234E-05	5.2608E-04	4.9373E-04
CO	9.2367E-02	1.8423E-03	8.3432E-04
CO+	4.5164E-04	4.7309E-04	3.5482E-04
CO2	3.3202E-05	2.2440E-07	6.4488E-06
C2	1.1166E-03	1.8429E-04	8.2002E-05

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/Sq-M, US1 = 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5872E+03	2.0791E+04	2.9287E+04
T	3.5740E+01	6.9921E+01	8.0006E+01
RHD	1.5764E+01	8.7680E+01	1.0214E+02
M	-4.4856E+00	-9.1593E+00	-1.1080E+01
A	9.7500E+00	1.5047E+01	1.6519E+01
S	2.5194E+00	2.7285E+00	2.8241E+00
Z	2.8162E+00	3.3914E+00	3.5838E+00
GAME	9.4445E-01	9.5475E-01	9.5185E-01
U	3.3963E+01	6.1174E+00	6.2002E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.7114E-03	1.1812E-01	1.6454E-01
O	6.3419E-01	5.3208E-01	4.6691E-01
O+	1.1761E-03	5.2808E-02	8.7361E-02
O++	8.2385E-16	1.1662E-07	1.4981E-06
H-	1.8969E-04	1.8641E-03	1.9270E-03
O2-	8.3376E-04	3.7031E-04	2.4209E-04
O2+	1.5024E-05	1.6385E-04	1.8888E-04
O2++	5.0090E-07	3.7361E-06	3.0946E-06
C-	2.7157E-01	2.2495E-01	1.9830E-01
C+	8.3178E-03	6.7079E-02	7.8988E-02
C++	4.9758E-11	6.0206E-06	2.9333E-05
C-	5.9339E-05	5.0885E-04	4.6532E-04
CO	7.2409E-02	1.4618E-03	6.7241E-04
CO+	4.5203E-04	4.3425E-04	3.2059E-04
CO2	2.3336E-05	1.5375E-07	4.4817E-08
C2	1.6481E-03	1.4639E-04	6.5080E-05

P1 = 5.00E+03 N/Sq-M, US1 = 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8161E+03	2.2676E+04	3.2022E+04
T	4.0286E+01	7.6822E+01	8.7604E+01
RHD	1.5044E+01	8.2836E+01	9.6573E+01
M	-5.2944E+00	-1.0622E+01	-1.2839E+01
A	1.0920E+01	1.6144E+01	1.7819E+01
S	2.8209E+00	2.8247E+00	2.9250E+00
Z	2.9935E+00	3.5634E+00	3.7850E+00
GAME	9.6913E-01	9.5213E-01	9.5798E-01
U	3.6273E+01	6.5995E+00	6.6952E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.1600E-02	1.5970E-01	2.0035E-01
O	6.4107E-01	4.7648E-01	4.0447E-01
O+	3.3720E-03	8.1255E-02	1.2113E-01
O++	8.9049E-16	8.4446E-07	7.8007E-06
H-	2.9773E-04	1.7267E-03	1.6232E-03
O2-	4.9940E-04	2.2812E-04	1.3906E-04
O2+	2.0586E-05	1.6460E-04	1.7002E-04
O2++	5.0716E-07	2.4951E-06	1.8425E-06
C-	2.9223E-01	1.9884E-01	1.7440E-01
C+	1.8263E-02	8.0078E-02	8.8048E-02
C++	1.1386E-04	2.1537E-05	8.6409E-05
C-	1.0062E-04	4.2717E-04	3.5949E-04
CO	2.1464E-02	6.8859E-04	3.1710E-04
CO+	4.9911E-04	3.1433E-04	2.1508E-04
CO2	4.0055E-06	4.4325E-08	1.2822E-08
C2	6.0898E-04	6.6982E-05	2.8049E-05

P1 = 5.00E+03 N/Sq-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6516E+03	2.1437E+04	3.0220E+04
T	3.0790E+01	7.1972E+01	8.2228E+01
RHD	1.5034E+01	8.6611E+01	1.0100E+02
M	-4.7114E+00	-9.5709E+00	-1.1575E+01
A	1.0050E+01	1.5360E+01	1.6805E+01
S	2.5480E+00	2.7559E+00	2.8520E+00
Z	2.8711E+00	3.4390E+00	3.6355E+00
GAME	9.5604E-01	9.5323E-01	9.5271E-01
U	3.4036E+01	6.2614E+00	6.3425E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1923E-02	1.2997E-01	1.7710E-01
O	6.3838E-01	5.1656E-01	4.4917E-01
O+	1.5202E-03	6.0598E-02	9.6885E-02
O++	2.6049E-15	2.1766E-07	2.5012E-06
H-	2.1571E-04	1.8424E-03	1.8555E-03
O2-	1.4206E-04	3.2325E-04	2.0874E-04
O2+	1.6390E-05	1.6607E-04	1.8948E-04
O2++	5.1485E-07	3.3657E-06	2.7057E-06
C-	2.8102E-01	2.1723E-01	1.9129E-01
C+	1.0219E-02	7.1123E-02	8.1940E-02
C++	1.0978E-10	8.9842E-06	4.0843E-05
C-	6.9880E-05	4.8830E-04	4.3550E-04
CO	5.4409E-02	1.1705E-03	5.4210E-04
CO+	4.4720E-04	3.9748E-04	2.8059E-04
CO2	1.5457E-05	1.0673E-07	3.1345E-08
C2	9.4894E-04	1.1674E-04	5.1504E-05

P1 = 5.00E+03 N/Sq-M, US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9801E+03	2.3641E+04	3.3429E+04
T	4.4682E+01	8.1432E+01	9.2905E+01
RHD	1.4353E+01	7.8575E+01	9.1345E+01
M	-5.9055E+00	-1.1709E+01	-1.4144E+01
A	1.1739E+01	1.6942E+01	1.8794E+01
S	2.6879E+00	2.8929E+00	2.9909E+00
Z	3.0970E+00	3.6948E+00	3.9309E+00
GAME	9.9591E-01	9.5405E-01	9.6517E-01
U	3.7807E+01	6.9270E+00	7.0578E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.9853E-02	1.8918E-01	2.3909E-01
O	6.2911E-01	4.3542E-01	3.6000E-01
O+	7.8795E-03	1.0303E-01	1.4559E-01
O++	3.5970E-12	2.6564E-06	2.1576E-05
H-	3.8792E-04	1.5587E-03	1.3005E-03
O2-	3.1206E-04	1.5926E-04	9.1145E-05
O2+	2.6972E-05	1.5574E-04	1.4881E-04
O2++	4.4474E-07	1.7799E-06	1.1894E-06
C-	2.8212E-01	1.8181E-01	1.5841E-01
C+	3.2116E-02	8.7573E-02	9.4513E-02
C++	1.2988E-08	4.5378E-05	1.6951E-04
C-	1.2981E-04	3.6294E-04	2.8867E-04
CO	7.5923E-03	4.1530E-04	1.8531E-04
CO+	3.4879E-04	2.4514E-04	1.6104E-04
CO2	8.4636E-07	1.9100E-08	5.2254E-09
C2	3.2147E-04	3.9017E-05	1.6147E-05

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $P_1 = 5.00E+03 \text{ N/Sq-M, USI} = 1.15E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1644E+03	2.4763F+04	3.5091E+04
T	4.5074E+01	8.8056E+01	9.8474E+01
KMD	-1.3804E+01	7.5085E+01	8.6908E+01
H	-6.5447E+00	-1.2849E+01	-1.5533E+01
A	1.2414E+01	1.7779E+01	1.9843E+01
S	2.7521E+00	2.9596E+00	3.0675E+00
Z	3.1951E+00	3.8324E+00	4.1004E+00
GAME	9.8284E-01	9.5842E-01	9.7512E-01
U	3.9473E+01	7.2674E+00	7.4515E+00

SPECIES ----- MOLE FRACTIONS -----

E-	6.4624E-02	2.1803E-01	2.6889E-01
O	6.0588E-01	3.9411F-01	3.1638E-01
O+	1.5425E-02	1.2543E-01	1.6922E-01
U+	1.6488E-11	7.3464E-06	5.4822E-05
U-	4.0521E-04	1.3731E-03	1.1100E-03
U2	2.0447E-04	1.1028E-04	5.7107E-05
U2+	3.3019E-03	1.4284E-04	1.2524E-04
U2-	3.8041E-07	1.2442E-06	7.3888E-07
C	2.3990E-01	1.6618E-01	1.4333E-01
C+	4.9188E-02	9.3761E-02	9.9030E-02
C++	9.4609E-08	8.8332E-05	3.1906E-04
C-	1.4600E-04	3.0352E-04	2.2731E-04
-LO	2.9203E-03	2.5457E-04	1.0749E-04
CU+	2.9204E-04	1.8938E-04	1.1107E-04
CU2	2.1621E-07	8.4620E-09	2.1093E-09
C2	1.6911E-04	2.3039E-05	9.0104E-06

 $P_1 = 5.00E+03 \text{ N/Sq-M, USI} = 1.25E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5420E+03	2.7905E+04	3.9890E+04
T	5.0490E+01	9.5838E+01	1.1107E+02
KMD	1.3258E+01	7.0638E+01	8.0896E+01
H	-7.9098E+00	-1.5298F+01	-1.8569E+01
A	1.3612E+01	1.9611E+01	2.2202E+01
S	2.8709E+00	3.0873F+00	3.2037E+00
Z	3.4024E+00	4.1220E+00	4.4390E+00
GAME	9.6390E-01	9.7355E-01	9.9907E-01
U	4.2702E+01	8.0375E+00	8.3707E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.1900E-01	2.7268E-01	3.2450E-01
O	5.4505E-01	3.1381E-01	2.3501E-01
O+	4.0152E-02	1.6982E-01	2.1420E-01
O++	4.0547E-09	4.4051E-05	3.0900E-04
U-	3.0292E-04	9.9885E-04	6.7904E-04
U2	1.0791E-04	5.0762E-05	2.1037E-05
U2+	4.2612E-05	1.1085E-04	8.0122E-05
U2-	2.7287E-07	5.7089F-07	2.5187E-07
C	2.1266E-01	1.3861E-01	1.1577E-01
C+	7.9805E-02	1.0317E-01	1.0029E-01
C++	1.2888E-08	2.9058F-04	1.0035E-03
C-	1.4688E-04	2.0443F-04	1.3283E-04
-LO	7.0285E-04	9.7157E-05	3.4422E-05
CU+	2.0876E-04	1.0957E-04	5.8004E-05
CU2	3.0080E-08	1.7148E-09	3.2081E-10
C2	5.8500E-05	8.1986E-06	2.7120E-06

 $P_1 = 5.00E+03 \text{ N/Sq-M, USI} = 1.20E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3519E+03	2.6234E+04	3.7314E+04
T	5.2952E+01	9.0805E+01	1.0421E+02
KMD	1.3477E+01	7.2711E+01	8.3654E+01
H	-7.2128E+00	-1.4045E+01	-1.7006E+01
A	1.3024E+01	1.8659F+01	2.0902E+01
S	2.8122E+00	3.0235F+00	3.1362E+00
Z	3.2927E+00	3.9733F+00	4.2676E+00
GAME	9.7151E-01	9.6491F-01	9.8704E-01
U	4.1108E+01	7.6348E+00	7.8910E+00

SPECIES ----- MOLE FRACTIONS -----

E-	9.1795E-02	2.4560E-01	2.9742E-01
O	5.7756E-01	3.5380E-01	2.7448E-01
O+	2.0781E-02	1.4763F-01	1.9272E-01
O++	7.4708E-10	1.8461E-05	1.3282E-04
U-	5.0345E-04	1.1878E-03	8.8508E-04
U2	1.4240E-04	7.5913E-05	3.5235E-05
U2+	3.0061E-05	1.2790E-04	1.0212E-04
U2-	3.2290E-07	8.5957E-07	4.4218E-07
C	2.3599E-01	1.5204E-01	1.2917E-01
C+	6.5384E-02	9.8776E-02	1.0413E-01
C++	4.0888E-07	1.6227E-04	5.8728E-04
C-	1.2160E-04	2.5158E-04	1.7279E-04
-LO	1.4244E-03	1.5831E-04	6.1332E-05
CU+	2.4078E-04	1.4545F-04	8.3482E-05
CU2	7.4059E-06	3.8491F-09	8.3663E-10
C2	9.6898E-05	1.3819F-05	4.9874E-06

 $P_1 = 5.00E+03 \text{ N/Sq-M, USI} = 1.30E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7559E+03	2.9728E+04	4.2774E+04
T	5.9777E+01	1.0111E+02	1.1817E+02
KMD	1.3111E+01	6.8794E+01	7.8455E+01
H	-8.0356E+00	-1.6603E+01	-2.0219E+01
A	1.4192E+01	2.0618E+01	2.3476E+01
S	2.9284E+00	3.1494E+00	3.2698E+00
Z	3.5137E+00	4.2739E+00	4.6137E+00
GAME	9.5930E-01	9.8378E-01	1.0109E+00
U	4.4334E+01	8.4820E+00	8.9072E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.4714E-01	2.9844E-01	3.4999E-01
O	5.1233E-01	2.7567E-01	1.9888E-01
O+	3.5441E-02	1.9098E-01	2.3322E-01
O++	1.9884E-08	9.9265E-05	6.8950E-04
U-	5.3118E-04	8.1853F-04	5.0519E-04
U2	8.0220E-05	3.3110E-05	1.1999E-05
U2+	4.4702E-05	9.3180E-05	6.0578E-05
U2-	2.2924E-07	3.6596F-07	1.3070E-07
C	1.9147E-01	1.2599E-01	1.0249E-01
C+	9.2141E-02	1.0706E-01	1.1211E-01
C++	3.6622E-06	5.0574E-04	1.8917E-03
C-	1.4112E-04	1.6340E-04	9.8088E-05
-LO	4.6740E-04	5.9108E-05	1.8808E-05
CU+	1.7021E-04	8.1284E-05	3.9426E-05
CU2	1.3724E-08	7.5393E-10	1.1875E-10
C2	3.6778E-05	4.8423E-06	1.4483E-06

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1 = 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9677E+03	3.1673E+04	4.5891E+04
T	6.2816E+01	1.0661E+02	1.2577E+02
RHO	1.3000E+01	6.7118E+01	7.6221E+01
H	-9.3900E+00	-1.7960E+01	-2.1949E+01
A	1.4775E+01	2.1666E+01	2.4755E+01
S	2.9849E+00	3.2093E+00	3.3345E+00
Z	3.6291E+00	4.4263E+00	4.7871E+00
GAME	9.5674E+01	9.9475E+01	1.0178E+02
U	4.6113E+01	8.9457E+00	9.4629E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7404E-01	3.2253E-01	3.7305E-01
O	4.7774E-01	2.4022E-01	1.6686E-01
O+	1.2184E-02	2.1046E-01	2.4096E-01
O++	6.9132E-08	2.1210E-04	1.4640E-03
O-	5.2241E-04	6.5504E-04	3.6598E-04
O2	0.3432E-05	2.1108E-05	6.6521E-06
U2+	4.6133E-05	7.6154E-05	4.4302E-05
U2-	1.9002E-07	2.2698E-07	7.1410E-08
U-	1.7250E-01	1.1416E-01	8.9991E-02
U+	1.0230E-01	1.1058E-01	1.1543E-01
C+	7.1200E-06	8.5752E-04	3.2756E-03
C-	1.3097E-04	1.2868E-04	7.1054E-05
C0	2.9404E-04	3.5664E-05	1.0097E-05
CU+	1.4083E-04	5.9480E-05	2.6190E-05
CU2	0.7488E-09	3.2756E-10	4.2999E-11
C2	2.3780E-05	2.8502E-06	7.6247E-07

P1 = 5.00E+03 N/SQ-M, US1 = 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4203E+03	3.5757E+04	5.2647E+04
T	6.8700E+01	1.1863E+02	1.4100E+02
RHO	1.2003E+01	6.3668E+01	7.2600E+01
H	-1.0980E+01	-2.0819E+01	-2.5641E+01
A	1.5922E+01	2.3864E+01	2.7103E+01
S	3.0900E+00	3.3260E+00	3.4584E+00
Z	3.6702E+00	4.7341E+00	5.1105E+00
GAME	9.5017E+01	1.0140E+02	1.0139E+02
U	4.9482E+01	9.9999E+00	1.0623E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2529E-01	3.6649E-01	4.1379E-01
O	4.0749E-01	1.7748E-01	1.1762E-01
O+	1.0840E-01	2.4357E-01	2.6775E-01
O++	5.3114E-07	8.6721E-04	5.2710E-03
O-	4.7583E-04	3.8782E-04	1.8951E-04
O2	3.8022E-05	7.8382E-06	2.0030E-06
U2+	4.5040E-05	4.6407E-05	2.2647E-05
U2-	1.2715E-07	7.7220E-08	1.9917E-08
U-	1.4061E-01	9.1800E-02	6.8042E-02
U+	1.1727E-01	1.1687E-01	1.1885E-01
C+	2.5428E-05	2.3491E-03	8.4162E-03
C-	1.0704E-04	7.5345E-05	3.7020E-05
C0	1.2053E-04	1.2267E-05	2.9952E-06
CU+	1.0424E-04	3.0036E-05	1.1410E-05
CU2	1.8013E-09	5.6741E-11	6.0440E-12
C2	1.0409E-05	9.4411E-07	2.1012E-07

P1 = 5.00E+03 N/SQ-M, US1 = 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1849E+03	3.3687E+04	4.9204E+04
T	6.5855E+01	1.1246E+02	1.3359E+02
RHO	1.2924E+01	6.5392E+01	7.4354E+01
H	-1.0173E+01	-1.9365E+01	-2.3703E+01
A	1.5359E+01	2.2759E+01	2.5962E+01
S	3.0407E+00	3.2683E+00	3.3967E+00
Z	3.7480E+00	4.5807E+00	4.9535E+00
GAME	9.5579E+01	1.0054E+02	1.0180E+02
U	4.7795E+01	9.4552E+00	1.0052E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.0012E-01	3.4531E-01	3.9451E-01
O	4.4264E-01	2.0726E-01	1.4000E-01
O+	8.9961E-02	2.2820E-01	2.6047E-01
O++	2.0373E-07	4.3745E-04	2.8797E-03
O-	5.0402E-04	5.0983E-04	2.6358E-04
O2	4.9155E-05	1.3027E-05	3.6962E-06
U2+	4.0410E-05	6.0279E-05	3.1915E-05
U2-	1.5692E-07	1.3471E-07	3.7268E-08
U-	1.5503E-01	1.0273E-01	7.8553E-02
U+	1.1058E-01	1.1388E-01	1.1777E-01
C+	1.3987E-05	1.4332E-03	5.3087E-03
C-	1.1454E-04	9.9298E-05	5.1327E-05
C0	1.9240E-04	2.1079E-05	5.4752E-06
CU+	1.2494E-04	4.2636E-05	1.7338E-05
CU2	3.4824E-09	1.3785E-10	1.5954E-11
C2	1.5677E-05	1.6503E-06	4.0013E-07

P1 = 5.00E+03 N/SQ-M, US1 = 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6583E+03	3.7861E+04	5.6159E+04
T	7.1620E+01	1.2506E+02	1.4938E+02
RHO	1.2703E+01	6.1984E+01	7.1319E+01
H	-1.1823E+01	-2.2320E+01	-2.7574E+01
A	1.6520E+01	2.4945E+01	2.8156E+01
S	3.1508E+00	3.3824E+00	3.5170E+00
Z	3.9924E+00	4.8843E+00	5.2714E+00
GAME	9.5773E+01	1.0187E+02	1.0007E+02
U	5.1162E+01	1.0552E+01	1.1174E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4951E-01	3.8595E-01	4.3100E-01
O	3.7203E-01	1.5132E-01	9.9742E-02
O+	1.2710E-01	2.5611E-01	2.7070E-01
O++	1.2614E-06	1.6417E-03	8.7842E-03
O-	4.4328E-04	2.9039E-04	1.3905E-04
O2	2.9219E-05	4.6445E-06	1.1977E-06
U2+	4.3798E-05	3.4965E-05	1.6201E-05
U2-	1.0124E-07	4.3269E-08	1.0665E-08
U-	1.2720E-01	8.1468E-02	5.8940E-02
U+	1.2205E-01	1.1935E-01	1.1640E-01
C+	4.3802E-05	3.7473E-03	1.2233E-02
C-	9.5701E-05	5.6496E-05	2.7203E-05
C0	8.7030E-05	7.0841E-06	1.7074E-06
CU+	8.0042E-05	2.0895E-05	7.6464E-06
CU2	1.0003E-09	2.3168E-11	2.4705E-12
C2	1.0400E-06	5.3705E-07	1.2190E-07

TABLE I.- Continued

$$p_1 = 5 \text{ kN/m}^2$$

 $p_1 = 5.00\text{E}+03 \text{ N/Sq-M, } US_1 = 1.55\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.9043E+03	3.9969E+04	5.9705E+04
T	7.4495E+01	1.3168E+02	1.5603E+02
KHU	1.2711E+01	6.0333E+01	7.0233E+01
H	-1.2693E+01	-2.3866E+01	-2.9551E+01
A	1.7173E+01	2.5977E+01	2.9153E+01
S	3.2052E+00	3.4379E+00	3.5755E+00
Z	4.1234E+00	5.0311E+00	5.4204E+00
GAME	9.6039E-01	1.0186E+00	9.9970E-01
U	5.2642E+01	1.1146E+01	1.1671E+01

SPECIES	MOLE FRACTIONS		
E-	2.7275E-01	4.0384E-01	4.4064E-01
O	3.3837E-01	1.2875E-01	8.5413E-02
O+	1.4601E-01	2.6553E-01	2.6997E-01
U+	2.7899E-06	2.9563E-03	1.3451E-02
C-	4.0514E-04	2.1540E-04	1.0443E-04
U2	2.2221E-05	2.7325E-06	7.2392E-07
O2+	4.1194E-05	2.5913E-05	1.1821E-05
U2-	7.9011E-08	2.3958E-08	6.1359E-09
C	1.1515E-01	7.1782E-02	5.1164E-02
C+	1.2697E-01	1.2105E-01	1.1856E-01
C++	7.2218E-05	5.7822E-03	1.6655E-02
C-	8.4218E-05	4.2031E-05	2.0426E-05
CO	5.9307E-05	4.0816E-06	1.0151E-06
CU+	1.1099E-05	1.4400E-05	5.2227E-06
CU2	5.4363E-10	9.4509E-12	1.0931E-12
C2	4.7504E-06	3.0492E-07	7.1099E-08

 $p_1 = 5.00\text{E}+03 \text{ N/Sq-M, } US_1 = 1.60\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1580E+03	4.2139E+04	6.3257E+04
T	7.7392E+01	1.3827E+02	1.6394E+02
KHU	1.2630E+01	5.8943E+01	6.9322E+01
H	-1.3589E+01	-2.5464E+01	-3.1575E+01
A	1.7616E+01	2.6931E+01	3.0123E+01
S	3.2592E+00	3.4914E+00	3.6319E+00
Z	4.2517E+00	5.1705E+00	5.5600E+00
GAME	9.0412E-01	1.0145E+00	9.9442E-01
U	5.4517E+01	1.1685E+01	1.2131E+01

SPECIES	MOLE FRACTIONS		
E-	2.9499E-01	4.1990E-01	4.6110E-01
O	3.0495E-01	1.1014E-01	7.3722E-02
O+	1.6465E-01	2.7148E-01	2.6632E-01
O++	5.8426E-06	4.9768E-03	1.9184E-02
O-	3.6391E-04	1.6108E-04	8.0098E-05
U2	1.6664E-05	1.6395E-06	4.5339E-07
O2+	3.7941E-05	1.9206E-05	8.6780E-06
U2-	6.0263E-08	1.3552E-08	3.6757E-09
C	1.0425E-01	6.3126E-02	4.4518E-02
C+	1.3044E-01	1.2166E-01	1.1354E-01
C++	1.1507E-04	8.4882E-03	2.1454E-02
C-	7.3203E-05	3.1507E-05	1.5647E-05
CO	4.0426E-05	2.4050E-06	6.2633E-07
CU+	5.7908E-05	9.9903E-06	3.6307E-06
CU2	2.9440E-10	4.0421E-12	5.1460E-13
C2	3.2102E-06	1.7692E-07	4.3028E-08

TABLE I. - Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 1.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7600E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.3808E+00	1.0950E+00	1.1158E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS		
E-	1.5208E-52	4.5371E-43	1.5927E-34
O	7.2829E-15	4.6564E-12	2.7032E-10
O+	4.4935E-38	2.9923E-34	2.1000E-31
O++	0.	0.	0.
O-	2.0915E-58	6.3590E-48	1.2974E-38
O2-	4.3992E-04	4.3992E-04	4.4015E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9637E-42	3.6854E-34
C	4.4629E-54	6.5544E-45	6.5950E-37
C+	4.1170E-64	9.3504E-56	2.5197E-48
C++	0.	0.	0.
C-	1.0728E-98	9.7169E-82	6.5330E-66
CO	5.1098E-12	4.9191E-09	4.6113E-07
CO+	7.4538E-37	1.6331E-32	3.5753E-29
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	4.5772E-78	3.9777E-65	3.1417E-53

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 1.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9418E+02	2.9172E+02
T	3.8892E+00	5.6891E+00	6.5646E+00
RHO	8.0418E+00	3.4121E+01	4.4350E+01
H	8.8932E-01	8.0789E-01	7.6494E-01
A	1.8839E+00	2.2652E+00	2.4244E+00
S	1.1503E+00	1.1794E+00	1.2033E+00
Z	1.0000E+00	1.0003E+00	1.0019E+00
GAME	9.1255E-01	9.0165E-01	8.9362E-01
U	4.5382E+00	1.0721E+00	1.0034E+00

SPECIES	MOLE FRACTIONS		
E-	1.4099E-35	2.2878E-20	3.7237E-17
O	1.6015E-10	2.9176E-07	4.8516E-06
O+	6.7678E-32	8.6004E-27	7.2393E-24
O++	0.	0.	5.9146E-93
O-	5.0617E-40	5.1642E-23	2.0876E-19
O2	4.4004E-04	7.4760E-04	2.3803E-03
O2+	1.7597E-18	1.7301E-18	5.4200E-17
O2-	1.1725E-35	6.0761E-21	1.5000E-17
C	6.8216E-38	1.1713E-24	1.1431E-20
C+	3.0620E-49	1.8795E-37	3.7273E-32
C++	0.	1.9089E-86	4.2833E-76
C-	7.5897E-68	1.0312E-39	3.0105E-34
CO	2.4142E-07	6.1593E-04	3.8873E-03
CO+	9.1222E-30	3.8809E-24	1.9668E-21
CO2	9.9956E-01	9.9864E-01	9.9373E-01
C2	1.0942E-54	1.6650E-34	1.1213E-29

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 1.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2844E+01	1.2169E+02	1.9026E+02
T	3.1957E+00	4.5032E+00	5.2606E+00
RHO	7.1505E+00	2.7027E+01	3.6163E+01
H	9.1903E-01	8.6219E-01	8.2787E-01
A	1.7137E+00	2.0229E+00	2.1817E+00
S	1.1154E+00	1.1374E+00	1.1601E+00
Z	1.0000E+00	1.0000E+00	1.0001E+00
GAME	9.1904E-01	9.0874E-01	9.0469E-01
U	3.8201E+00	1.0100E+00	9.3927E-01

SPECIES	MOLE FRACTIONS		
E-	1.2350E-42	4.3980E-27	2.4926E-23
O	6.7419E-13	1.8372E-09	6.1347E-08
O+	1.5449E-34	6.9904E-30	1.0076E-27
O++	0.	0.	0.
O-	1.1117E-47	1.3892E-30	1.8845E-26
O2	4.3992E-04	4.4165E-04	5.1767E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0046E-42	1.7376E-27	8.2456E-24
C	1.6482E-44	4.8711E-30	1.0338E-26
C+	2.1579E-55	5.3405E-42	5.5637E-39
C++	0.	1.0875E-98	2.8646E-92
C-	7.8411E-81	4.6099E-52	1.4607E-45
CO	1.1789E-09	3.4683E-06	1.5563E-04
CO+	1.0226E-32	5.6353E-27	5.6896E-25
CO2	9.9956E-01	9.9955E-01	9.9933E-01
C2	1.7887E-64	6.2425E-43	3.4403E-38

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 1.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8640E+02	4.1581E+02
T	4.6618E+00	6.9371E+00	7.8084E+00
RHO	8.8004E+00	4.1133E+01	5.2670E+01
H	8.5508E-01	7.4499E-01	6.9349E-01
A	2.0572E+00	2.4878E+00	2.6345E+00
S	1.1847E+00	1.2201E+00	1.2450E+00
Z	1.0000E+00	1.0037E+00	1.0110E+00
GAME	9.3782E-01	8.8888E-01	8.7916E-01
U	5.2490E+00	1.1244E+00	1.0511E+00

SPECIES	MOLE FRACTIONS		
E-	1.2354E-25	2.5551E-16	1.9114E-14
O	8.5648E-09	1.4504E-05	1.0453E-04
O+	1.4862E-29	2.6210E-23	6.3225E-20
O++	0.	1.2900E-87	7.2186E-80
O-	2.9013E-29	1.5562E-18	4.7589E-16
O2	4.4986E-04	4.1176E-03	1.1227E-02
O2+	1.7596E-18	3.6362E-16	3.2639E-14
O2-	1.4051E-26	1.0482E-16	1.3055E-14
C	8.7674E-29	7.2735E-20	5.6010E-17
C+	7.0122E-41	1.9731E-30	6.1553E-27
C++	1.8692E-96	1.1796E-71	3.0089E-65
C-	9.8172E-50	2.3768E-32	9.9849E-29
CO	1.9910E-05	7.3731E-03	2.1689E-02
CO+	1.4950E-28	1.3667E-20	7.3247E-18
CO2	9.9953E-01	9.8849E-01	9.6698E-01
C2	3.2002E-41	2.8502E-28	9.5175E-25

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.}$
 $US1 = 1.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2102E+01	4.0030E+02	5.6287E+02
T	5.5068E+00	8.0881E+00	8.8838E+00
RHO	9.4580E+00	4.8737E+01	6.1444E+01
M	8.1626E-01	6.7327E-01	6.1366E-01
A	2.2289E+00	2.6819E+00	2.8239E+00
S	1.2181E+00	1.2600E+00	1.2864E+00
Z	1.0003E+00	1.0155E+00	1.0312E+00
GAME	9.0191E-01	8.7574E-01	8.7048E-01
U	5.9572E+00	1.1584E+00	1.0821E+00

SPECIES	MOLE FRACTIONS		
E-	4.0553E-21	6.4533E-14	9.9167E-13
O	3.3261E-07	1.9669E-04	7.1815E-04
O+	5.9880E-27	3.6046E-19	2.0781E-17
O++	0.	7.2411E-78	1.3858E-68
O-	2.4100E-24	2.0212E-15	6.4399E-14
O2	7.5307E-04	1.5502E-02	2.9958E-02
O2+	1.7636E-18	1.1164E-13	2.0288E-12
O2-	4.0716E-22	4.5116E-14	9.7413E-13
C	5.9445E-25	2.7732E-16	1.2026E-14
C+	1.7822E-37	5.8037E-26	7.6136E-24
C++	1.1035E-89	1.6919E-63	4.0558E-56
C-	1.6699E-02	1.0079E-27	1.4279E-25
CO	6.2691E-04	3.0334E-02	5.9781E-02
CO+	2.8077E-24	3.4296E-17	1.3800E-15
CO2	9.9867E-01	9.5397E-01	9.0954E-01
C2	4.5551E-36	7.4933E-24	1.0563E-21

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.}$
 $US1 = 2.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8447E+01	7.1379E+02	9.5411E+02
T	7.2031E+00	1.0015E+01	1.0711E+01
RHO	1.0797E+01	6.6515E+01	8.0814E+01
M	7.2481E-01	5.0235E-01	4.2588E-01
A	2.5275E+00	3.0517E+00	3.2037E+00
S	1.2818E+00	1.3420E+00	1.3712E+00
Z	1.0086E+00	1.0716E+00	1.1022E+00
GAME	8.7928E-01	8.6779E-01	8.6938E-01
U	7.3869E+00	1.2013E+00	1.1384E+00

SPECIES	MOLE FRACTIONS		
E-	3.3566E-15	2.6764E-11	1.3061E-10
O	7.1050E-05	3.4405E-03	6.7568E-03
O+	3.2268E-21	3.0757E-15	4.5547E-14
O++	5.2328E-87	5.4855E-60	6.4698E-58
O-	2.3638E-17	3.8047E-12	2.9765E-11
O2	8.9297E-03	6.3791E-02	8.6366E-02
O2+	4.0129E-15	6.3089E-11	3.4808E-10
O2-	6.3124E-16	3.2639E-11	1.8893E-10
C	2.8516E-18	1.1340E-12	1.2131E-11
C+	5.8899E-29	4.6299E-21	6.0845E-19
C++	7.5857E-71	4.4657E-49	3.1872E-47
C-	2.9562E-31	1.0675E-22	2.5675E-20
CO	1.7058E-02	1.3020E-01	1.7869E-01
CO+	3.7626E-19	1.1583E-13	1.1792E-12
CO2	9.7394E-01	8.0257E-01	7.2819E-01
C2	6.0094E-27	5.1875E-19	2.3440E-17

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.}$
 $US1 = 2.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4548E+01	5.3989E+02	7.3821E+02
T	6.3820E+00	9.1065E+00	9.8292E+00
RHO	1.0090E+01	5.7084E+01	7.0717E+01
M	7.7286E-01	5.9254E-01	5.2481E-01
A	2.3883E+00	2.8668E+00	3.0102E+00
S	1.2505E+00	1.3008E+00	1.3283E+00
Z	1.0024E+00	1.0386E+00	1.0620E+00
GAME	8.9167E-01	8.6900E-01	8.6804E-01
U	6.6672E+00	1.1806E+00	1.1084E+00

SPECIES	MOLE FRACTIONS		
E-	2.3354E-17	2.2873E-12	1.6131E-11
O	6.9417E-06	1.0753E-03	2.6168E-03
O+	9.0224E-25	8.4038E-17	1.7442E-15
O++	4.3829E-95	4.5016E-68	1.2088E-63
O-	3.8838E-20	1.7997E-13	2.1895E-12
O2	2.7772E-03	3.6484E-02	5.6183E-02
O2+	2.8041E-17	4.6913E-12	3.8333E-11
O2-	2.8928E-18	2.2284E-12	2.0080E-11
C	1.8264E-21	4.0008E-14	6.3764E-13
C+	6.3743E-33	1.0546E-22	6.6417E-21
C++	1.1243E-77	1.1934E-55	7.0895E-52
C-	2.4256E-35	2.8521E-24	2.2910E-22
CO	4.6836E-03	7.3195E-02	1.1415E-01
CO+	3.9654E-22	4.3182E-15	6.6041E-14
CO2	9.9253E-01	8.8925E-01	8.2705E-01
C2	6.7275E-31	7.6959E-21	3.7457E-19

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.}$
 $US1 = 2.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3786E+01	9.2490E+02	1.2152E+03
T	7.9454E+00	1.0869E+01	1.1570E+01
RHO	1.1557E+01	7.6441E+01	9.1271E+01
M	6.7214E-01	4.0288E-01	3.1667E-01
A	2.6566E+00	3.2439E+00	3.4093E+00
S	1.3138E+00	1.3841E+00	1.4152E+00
Z	1.0213E+00	1.1132E+00	1.1507E+00
GAME	8.6969E-01	8.6975E-01	8.7305E-01
U	8.1123E+00	1.2287E+00	1.1757E+00

SPECIES	MOLE FRACTIONS		
E-	1.0354E-13	1.9398E-10	7.1125E-10
O	3.7588E-04	8.2259E-03	1.4238E-02
O+	4.8834E-19	8.0300E-14	6.4178E-13
O++	5.1870E-77	3.4455E-57	2.2781E-53
O-	1.6861E-15	4.6424E-11	2.4094E-10
O2	2.0984E-02	9.3815E-02	1.1708E-01
O2+	1.3120E-13	5.0895E-10	2.0614E-09
O2-	2.6003E-14	2.7054E-10	1.1221E-09
C	3.0005E-16	2.0201E-11	1.3198E-10
C+	4.6033E-26	1.2811E-18	2.3638E-17
C++	6.0063E-63	1.3457E-46	1.6278E-43
C-	3.4689E-28	5.4093E-20	1.1355E-18
CO	4.1422E-02	1.9507E-01	2.4746E-01
CO+	3.3223E-17	1.9123E-12	1.2190E-11
CO2	9.3725E-01	7.0289E-01	6.2104E-01
C2	3.2167E-24	4.5093E-17	6.6191E-16

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. U51= 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1058E+02	1.1789E+03	1.5297E+03
T	8.5874E+00	1.1706E+01	1.2442E+01
RHO	1.2379E+01	8.6654E+01	1.0189E+02
H	6.1485E-01	2.9406E-01	1.9678E-01
A	2.7790E+00	3.4476E+00	3.6315E+00
S	1.3457E+00	1.4271E+00	1.4603E+00
Z	1.0401E+00	1.1622E+00	1.2067E+00
GAME	8.6461E-01	8.7373E-01	8.7842E-01
U	8.8434E+00	1.2655E+00	1.2228E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2773E-12	9.5930E-10	3.0591E-09
O	1.2228E-03	1.6453E-02	2.6374E-02
O+	2.3066E-17	9.8622E-13	6.3054E-12
O++	1.0607E-71	7.5652E-53	1.7294E-49
O-	3.9982E-14	3.3420E-10	1.4233E-09
O2	3.7782E-02	1.2347E-01	1.4525E-01
O2+	1.7105E-12	2.7223E-09	9.3694E-09
O2-	3.9421E-13	1.4473E-09	4.9845E-09
C	9.9944E-15	1.9378E-10	1.0347E-09
C+	1.1800E-23	4.1754E-17	5.6400E-16
C++	2.0205E-58	4.7275E-43	2.4775E-40
C-	1.3782E-25	1.9946E-18	2.9537E-17
CO	7.5942E-02	2.6263E-01	3.1615E-01
CO+	9.6390E-16	1.7496E-11	9.1143E-11
CO2	8.8505E-01	5.9745E-01	5.1222E-01
C2	4.9121E-22	1.0821E-15	1.1816E-14

P1 = 1.00E+04 N/SQ-M. U51= 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4837E+02	1.8090E+03	2.3153E+03
T	9.6916E+00	1.3417E+01	1.4309E+01
RHO	1.4000E+01	1.0540E+02	1.2086E+02
H	4.8650E-01	4.9448E-02	-7.5247E-02
A	3.0238E+00	3.8993E+00	4.1369E+00
S	1.4114E+00	1.5154E+00	1.5532E+00
Z	1.0935E+00	1.2792E+00	1.3388E+00
GAME	8.6277E-01	8.8589E-01	8.9338E-01
U	1.0308E+01	1.3712E+00	1.3532E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.8717E-11	1.2914E-08	3.7189E-08
O	5.9981E-03	4.8021E-02	7.0900E-02
O+	3.8676E-15	5.7151E-11	3.1306E-10
O++	1.4566E-63	6.2350E-47	4.2416E-43
O-	2.7380E-12	7.6391E-09	2.7146E-08
O2	7.9877E-02	1.7057E-01	1.8246E-01
O2+	5.6421E-11	3.9337E-08	1.1592E-07
O2-	1.5060E-11	1.9464E-08	5.4675E-08
C	1.0806E-12	7.5688E-09	3.5150E-08
C+	1.2689E-20	1.1551E-14	1.3187E-13
C++	1.0451E-51	8.2343E-38	5.1150E-35
C-	2.1798E-22	6.2585E-16	7.3797E-15
CO	1.6495E-01	3.8847E-01	4.3517E-01
CO+	8.9224E-14	6.2285E-10	2.7796E-09
CO2	7.4918E-01	3.9294E-01	3.1147E-01
C2	3.0944E-19	1.7885E-13	1.6072E-12

P1 = 1.00E+04 N/SQ-M. U51= 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2878E+02	1.4744E+03	1.8967E+03
T	9.1618E+00	1.2548E+01	1.3347E+01
RHO	1.3205E+01	9.6484E+01	1.1193E+02
H	5.5297E-01	1.7618E-01	6.6253E-02
A	2.9005E+00	3.6653E+00	3.8729E+00
S	1.3782E+00	1.4709E+00	1.5063E+00
Z	1.0644E+00	1.2178E+00	1.2695E+00
GAME	8.6270E-01	8.7919E-01	8.8522E-01
U	9.5759E+00	1.3127E+00	1.2807E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.4394E-12	3.7713E-09	1.1275E-08
O	2.9699E-03	2.9281E-02	4.4687E-02
O+	3.8860E-16	8.3183E-12	4.8805E-11
O++	2.6577E-67	2.2563E-49	5.0402E-46
O-	4.1666E-13	1.7621E-09	6.7594E-09
O2	5.7950E-02	1.4990E-01	1.6795E-01
O2+	1.1834E-11	1.1260E-08	3.5373E-08
O2-	2.9905E-12	5.8498E-09	1.7934E-08
C	1.3281E-13	1.3305E-09	6.5400E-09
C+	5.4945E-22	7.9024E-16	9.8614E-15
C++	8.8871E-55	3.4875E-40	1.7835E-37
C-	8.0046E-24	4.0877E-17	5.4192E-16
CO	1.1804E-01	3.2837E-01	3.7989E-01
CO+	1.1745E-14	1.1488E-10	5.4692E-10
CO2	8.2104E-01	4.9245E-01	4.0748E-01
C2	1.7180E-20	1.5825E-14	1.5583E-13

P1 = 1.00E+04 N/SQ-M. U51= 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6932E+02	2.1798E+03	2.7823E+03
T	1.0194E+01	1.4330E+01	1.5344E+01
RHO	1.4741E+01	1.1303E+02	1.2827E+02
H	4.1545E-01	-8.5989E-02	-2.2726E-01
A	3.1504E+00	4.1516E+00	4.4253E+00
S	1.4454E+00	1.5602E+00	1.6004E+00
Z	1.1268E+00	1.3458E+00	1.4136E+00
GAME	8.6412E-01	8.9372E-01	9.0281E-01
U	1.1037E+01	1.4416E+00	1.4341E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.3979E-10	4.0125E-08	1.1406E-07
O	1.0712E-02	7.4002E-02	1.0640E-01
O+	2.7319E-14	3.4159E-10	1.8173E-09
O++	2.7040E-60	5.8452E-43	5.0920E-40
O-	1.3258E-11	2.8512E-08	9.6231E-08
O2	1.0220E-01	1.8327E-01	1.8651E-01
O2+	2.1011E-10	1.2070E-07	3.4031E-07
O2-	5.7592E-11	5.5341E-08	1.4462E-07
C	6.3832E-12	3.7882E-08	1.7310E-07
C+	1.8622E-19	1.4761E-13	1.6332E-12
C++	4.9347E-49	6.6283E-35	1.8035E-32
C-	3.6113E-21	8.0393E-15	8.9195E-14
CO	2.1432E-01	4.3989E-01	4.7879E-01
CO+	4.9672E-13	2.9391E-09	1.2774E-08
CO2	6.7277E-01	3.0283E-01	2.2830E-01
C2	3.6102E-18	1.7160E-12	1.4897E-11

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 3.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9162E+02	2.5827E+03	3.2958E+03
T	1.0680E+01	1.5301E+01	1.6475E+01
RHD	1.5413E+01	1.1911E+02	1.3392E+02
H	3.3984E-01	-2.3000E-01	-3.9041E-01
A	3.2819E+00	4.4240E+00	4.7416E+00
S	1.4800E+00	1.6051E+00	1.6479E+00
Z	1.1640E+00	1.4171E+00	1.4938E+00
GAME	8.6637E-01	9.0264E-01	9.1356E-01
U	1.1764E+01	1.5246E+00	1.5292E+00

SPECIES	MOLE FRACTIONS		
E-	4.2721E-10	1.1478E-07	3.2876E-07
O	1.7551E-02	1.0830E-01	1.5196E-01
O+	1.5155E-13	1.7691E-09	9.5389E-09
O++	2.0996E-57	1.6065E-40	3.8847E-37
O-	5.1717E-11	9.3142E-08	3.0392E-07
O2	1.2371E-01	1.8634E-01	1.7891E-01
O2+	6.5739E-10	3.3098E-07	9.0439E-07
O2-	1.8085E-10	1.3709E-07	3.3508E-07
C	3.0124E-11	1.6851E-07	7.8715E-07
C+	1.9759E-18	1.5293E-12	1.8160E-11
C++	1.1364E-46	1.0229E-32	4.6646E-30
C-	4.1772E-20	8.1462E-14	9.3058E-13
CO	2.6423E-01	4.8035E-01	5.0918E-01
CO+	2.2367E-12	1.2257E-08	5.3822E-08
CO2	5.9451E-01	2.2501E-01	1.5996E-01
C2	3.0882E-17	1.3667E-11	1.2381E-10

 $p_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 3.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.4022E+02	3.4653E+03	4.4503E+03
T	1.1643E+01	1.7475E+01	1.9134E+01
RHD	1.6518E+01	1.2620E+02	1.3949E+02
H	1.7492E-01	-5.4323E-01	-7.5205E-01
A	3.5629E+00	5.0365E+00	5.4764E+00
S	1.5513E+00	1.6945E+00	1.7427E+00
Z	1.2490E+00	1.5713E+00	1.6674E+00
GAME	8.7289E-01	9.2379E-01	9.4008E-01
U	1.3209E+01	1.7314E+00	1.7740E+00

SPECIES	MOLE FRACTIONS		
E-	2.8758E-09	7.8696E-07	2.3980E-06
O	3.9604E-02	2.0191E-01	2.6859E-01
O+	2.9031E-12	3.6282E-08	2.0937E-07
O++	1.6532E-52	7.7459E-35	1.0364E-31
O-	5.0855E-10	7.1818E-07	2.2395E-06
O2	1.6012E-01	1.6195E-01	1.3191E-01
O2+	4.5372E-09	1.8786E-06	4.8415E-06
O2-	1.1850E-09	5.7861E-07	1.2252E-06
C	4.3247E-10	2.7329E-06	1.4718E-05
C+	1.1741E-16	1.3056E-10	1.9177E-09
C++	1.2126E-42	4.1288E-28	1.9085E-25
C-	2.7186E-18	5.8699E-12	7.6495E-11
CO	3.5914E-01	5.2524E-01	5.3187E-01
CO+	2.9288E-11	1.6870E-07	8.1000E-07
CO2	4.4114E-01	1.1089E-01	6.7596E-02
C2	1.2211E-15	6.6657E-10	7.3693E-09

 $p_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 3.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1526E+02	3.0130E+03	3.8524E+03
T	1.1161E+01	1.6345E+01	1.7724E+01
RHD	1.6008E+01	1.2352E+02	1.3769E+02
H	2.5966E-01	-3.8245E-01	-5.6495E-01
A	3.4190E+00	4.7183E+00	5.0895E+00
S	1.5154E+00	1.6500E+00	1.6953E+00
Z	1.2048E+00	1.4925E+00	1.5787E+00
GAME	8.6933E-01	9.1263E-01	9.2579E-01
U	1.2488E+01	1.6208E+00	1.6396E+00

SPECIES	MOLE FRACTIONS		
E-	1.1582E-09	3.0899E-07	9.0042E-07
O	2.7004E-02	1.5123E-01	2.0681E-01
O+	7.0636E-13	8.3934E-09	4.5936E-08
O++	7.8996E-55	1.9941E-37	1.6635E-34
O-	1.7216E-10	2.7258E-07	8.6282E-07
O2	1.4338E-01	1.7904E-01	1.6001E-01
O2+	1.8113E-09	8.2532E-07	2.1871E-06
O2-	4.9019E-10	2.9931E-07	6.8210E-07
C	1.2099E-10	6.9787E-07	3.4247E-06
C+	1.6542E-17	1.4862E-11	1.8650E-10
C++	1.4670E-44	2.7382E-30	8.4882E-28
C-	3.7098E-19	7.3978E-13	8.6269E-12
CO	3.1299E-01	5.0871E-01	5.2628E-01
CO+	8.5801E-12	4.7159E-08	2.1216E-07
CO2	5.1665E-01	1.6102E-01	1.0688E-01
C2	2.1073E-16	9.9881E-11	9.5507E-10

 $p_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 4.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6649E+02	3.9334E+03	5.0836E+03
T	1.2134E+01	1.8717E+01	2.0774E+01
RHD	1.6940E+01	1.2717E+02	1.3927E+02
H	8.5616E-02	-7.1218E-01	-9.5153E-01
A	3.7143E+00	5.3818E+00	5.9112E+00
S	1.5878E+00	1.7385E+00	1.7895E+00
Z	1.2964E+00	1.6525E+00	1.7570E+00
GAME	8.7699E-01	9.3645E-01	9.5731E-01
U	1.3927E+01	1.8577E+00	1.9280E+00

SPECIES	MOLE FRACTIONS		
E-	6.6832E-09	1.9242E-06	6.4021E-06
O	5.5920E-02	2.5811E-01	3.3271E-01
O+	1.0891E-11	1.4581E-07	9.1694E-07
O++	2.3118E-50	2.1873E-32	5.4753E-29
O-	1.3685E-09	1.7246E-06	5.4204E-06
O2	1.7307E-01	1.3700E-01	9.8374E-02
O2+	1.0599E-08	3.9225E-06	9.7622E-06
O2-	2.6100E-09	9.9478E-07	1.9915E-06
C	1.4200E-09	1.0319E-05	6.5480E-05
C+	7.4128E-16	1.0889E-09	2.0845E-08
C++	7.5011E-41	5.1172E-26	4.3073E-23
C-	1.7336E-17	4.2721E-11	6.8642E-10
CO	4.0138E-01	5.3158E-01	5.2889E-01
CO+	9.2339E-11	5.7424E-07	3.0748E-06
CO2	3.6963E-01	7.3286E-02	3.9972E-02
C2	6.2900E-15	4.2620E-09	6.0535E-08

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad U_{S1} = 4.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9405E+02	4.4102E+03	5.7506E+03
T	1.2639E+01	2.0112E+01	2.2795E+01
RHO	1.7274E+01	1.2644E+02	1.3690E+02
H	-8.2443E-03	-8.8913E-01	-1.1650E+00
A	3.8740E+00	5.7603E+00	6.4086E+00
S	1.6247E+00	1.7816E+00	1.8354E+00
Z	1.3469E+00	1.7342E+00	1.8427E+00
GAME	8.8162E-01	9.5130E-01	9.7776E-01
U	1.4641E+01	2.0029E+00	2.1127E+00

SPECIES	MOLE FRACTIONS		
E-	1.4750E-08	4.6305E-06	1.8350E-05
O	7.6511E-02	3.1644E-01	3.9332E-01
O+	3.8179E-11	5.3719E-07	3.9746E-06
O++	2.7604E-48	5.7079E-30	2.9785E-26
O-	3.4120E-09	3.8454E-06	1.2846E-05
O2	1.8136E-01	1.0717E-01	6.4185E-02
O2+	2.3159E-08	7.5306E-06	1.7702E-05
O2++	5.3072E-09	1.5319E-06	2.8116E-05
C	4.3794E-09	3.9176E-05	3.2631E-04
C+	4.3239E-15	9.1270E-09	2.5326E-07
C++	4.0839E-39	6.3013E-24	1.1352E-20
C--	9.9637E-17	3.0289E-10	7.0553E-09
CO-	4.3858E-01	5.3022E-01	5.2060E-01
CO+	2.7207E-10	1.9112E-06	1.2085E-05
CO2	3.0355E-01	4.6110E-02	2.1496E-02
C2	2.9733E-14	2.7746E-08	5.9360E-07

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad U_{S1} = 4.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5303E+02	5.3574E+03	7.1579E+03
T	1.3710E+01	2.3727E+01	2.8223E+01
RHO	1.7680E+01	1.1990E+02	1.2878E+02
H	-2.0962E-01	-1.2660E+00	-1.6330E+00
A	4.2212E+00	6.6403E+00	7.3303E+00
S	1.6994E+00	1.8639E+00	1.9216E+00
Z	1.4564E+00	1.8832E+00	1.9694E+00
GAME	8.9238E-01	9.8682E-01	9.6671E-01
U	1.6058E+01	2.3710E+00	2.5537E+00

SPECIES	MOLE FRACTIONS		
E-	6.3720E-08	3.0624E-05	1.9496E-04
O	1.3217E-01	4.2119E-01	4.7227E-01
O+	4.0454E-10	7.4881E-06	5.2223E-05
O++	3.4741E-44	4.1068E-25	4.5740E-21
O-	1.7515E-08	1.7490E-05	7.2622E-05
O2	1.8150E-01	4.7948E-02	1.9904E-02
O2+	9.6494E-08	2.0790E-05	3.4573E-05
O2++	1.7745E-08	2.7806E-06	5.0453E-06
C	3.6553E-08	7.0219E-04	9.2928E-03
C+	1.2622E-13	8.1536E-07	3.5409E-05
C++	1.0352E-35	1.3126E-19	5.6944E-16
C-	2.6034E-15	1.9523E-08	9.9815E-07
CO	4.9456E-01	5.1526E-01	4.9273E-01
CO+	2.0815E-09	2.1820E-05	1.5143E-04
CO2	1.9178E-01	1.4790E-02	5.1803E-03
C2	5.5616E-13	1.6718E-06	7.3357E-05

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad U_{S1} = 4.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2291E+02	4.8877E+03	6.4481E+03
T	1.3163E+01	2.1742E+01	2.5382E+01
RHO	1.7519E+01	1.2399E+02	1.3265E+02
H	-1.0666E-01	-1.0738E+00	-1.3936E+00
A	4.0428E+00	6.1802E+00	6.9391E+00
S	1.6619E+00	1.8235E+00	1.8799E+00
Z	1.4002E+00	1.8130E+00	1.9151E+00
GAME	8.8675E-01	9.6895E-01	9.9058E-01
U	1.5352E+01	2.1719E+00	2.3332E+00

SPECIES	MOLE FRACTIONS		
E-	3.1214E-08	1.1428E-05	6.0627E-05
O	1.0184E-01	3.7258E-01	4.4203E-01
O+	1.2698E-10	2.0678E-06	1.6579E-05
O++	3.2418E-46	1.4587E-27	1.8868E-23
O-	7.9647E-09	8.2072E-06	3.1425E-05
O2	1.8431E-01	7.6071E-02	3.5894E-02
O2+	4.8327E-08	1.3231E-05	2.7424E-05
O2++	1.0041E-08	2.1406E-06	3.8080E-06
C	1.2883E-08	1.5726E-04	1.8969E-03
C+	2.3850E-14	8.1799E-08	3.5848E-06
C++	2.1264E-37	8.3226E-22	3.8329E-18
C-	5.2732E-16	2.2612E-09	9.1965E-08
CO	4.6984E-01	5.2395E-01	5.0959E-01
CO+	7.6529E-10	6.3981E-06	4.8364E-05
CO2	2.4401E-01	2.7198E-02	1.0383E-02
C2	1.3178E-13	1.9802E-07	7.4215E-06

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad U_{S1} = 4.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8441E+02	5.8149E+03	7.8497E+03
T	1.4287E+01	2.6106E+01	3.0505E+01
RHO	1.7759E+01	1.1491E+02	1.2741E+02
H	-3.1713E-01	-1.4654E+00	-1.8746E+00
A	4.4102E+00	7.0695E+00	7.6025E+00
S	1.7370E+00	1.9023E+00	1.9601E+00
Z	1.5151E+00	1.9384E+00	2.0196E+00
GAME	8.9857E-01	9.8762E-01	9.3815E-01
U	1.6761E+01	2.5938E+00	2.7143E+00

SPECIES	MOLE FRACTIONS		
E-	1.2600E-07	8.9487E-05	4.4665E-04
O	1.6743E-01	4.5666E-01	4.9110E-01
O+	1.2425E-09	2.4525E-05	1.0618E-04
O++	3.0569E-42	9.8558E-23	1.6546E-19
O-	3.6421E-08	3.7760E-05	1.3320E-04
O2	1.7284E-01	2.7521E-02	1.3563E-02
O2+	1.8504E-07	2.8032E-05	3.8763E-05
O2++	2.9340E-08	3.4889E-06	6.4977E-06
C	1.0093E-07	3.3009E-03	2.5603E-02
C+	6.4702E-13	8.0503E-06	1.4757E-04
C++	4.4774E-34	1.9364E-17	1.4089E-14
C-	1.2095E-14	1.8742E-07	4.9337E-06
CO	5.1253E-01	5.0462E-01	4.6505E-01
CO+	5.4825E-09	7.0316E-05	2.9876E-04
CO2	1.4720E-01	7.6174E-03	3.1909E-03
C2	2.2623E-12	1.5438E-05	3.1353E-04

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00E+04 \text{ N/SQ-M.} \quad U_{S1} = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1703E+02	6.2724E+03	8.5194E+03
T	1.4898E+01	2.8480E+01	3.2239E+01
RHO	1.7760E+01	1.1108E+02	1.2739E+02
H	-4.2918E-01	-1.6730E+00	-2.1198E+00
A	4.6109E+00	7.3595E+00	7.8673E+00
S	1.7746E+00	1.9387E+00	1.9970E+00
Z	1.5762E+00	1.9827E+00	2.0744E+00
GAME	9.0540E-01	9.5917E-01	9.2550E-01
U	1.7459E+01	2.7956E+00	2.8317E+00

SPECIES	MOLE FRACTIONS		
E-	2.4227E-07	2.3565E-04	7.8068E-04
O	2.0715E-01	4.7878E-01	5.0685E-01
O+	3.6959E-09	6.0487E-05	1.6840E-04
O++	2.1176E-40	7.9786E-21	1.7324E-18
-O-	7.1823E-08	7.4791E-05	2.0404E-04
O2	1.5870E-01	1.6769E-02	1.0834E-02
O2+	3.4166E-07	3.2597E-05	4.2651E-05
O2-	4.5403E-08	4.3542E-06	8.0733E-06
C	2.7341E-07	1.1960E-02	4.7147E-02
C+	3.2291E-12	5.0504E-05	3.5105E-04
C++	1.6623E-32	1.0685E-15	1.0706E-13
C-	5.3237E-14	1.3082E-06	1.3629E-05
CO	5.2399E-01	4.8750E-01	4.3015E-01
CO+	1.4136E-08	1.7252E-04	4.4453E-04
CO2	1.1016E-01	4.2572E-03	2.2765E-03
C2	8.9617E-12	9.8306E-05	7.3804E-04

 $P_1 = 1.00E+04 \text{ N/SQ-M.} \quad U_{S1} = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8588E+02	7.2023E+03	9.7786E+03
T	1.6267E+01	3.1934E+01	3.4940E+01
RHO	1.7530E+01	1.0845E+02	1.2738E+02
H	-6.6685E-01	-2.1145E+00	-2.6279E+00
A	5.0557E+00	7.8344E+00	8.4072E+00
S	1.8494E+00	2.0085E+00	2.0693E+00
Z	1.7039E+00	2.0795E+00	2.1971E+00
GAME	9.2718E-01	9.2424E-01	9.2072E-01
U	1.8841E+01	3.0506E+00	3.0064E+00

SPECIES	MOLE FRACTIONS		
E-	8.4825E-07	7.9070E-04	1.6445E-03
O	2.9594E-01	5.0903E-01	5.3612E-01
O+	3.1397E-08	1.6495E-04	3.2058E-04
O++	1.0929E-36	1.2986E-18	4.2914E-17
-O-	2.4301E-07	1.8295E-04	3.6837E-04
O2	1.1744E-01	9.8294E-03	8.4033E-03
O2+	1.0552E-06	3.8289E-05	5.0840E-05
O2-	8.8955E-08	6.4883E-06	1.1399E-05
C	2.0299E-06	4.8301E-02	9.4978E-02
C+	8.4567E-11	3.6118E-04	1.0011E-03
C++	2.6032E-29	9.5123E-14	1.4839E-12
C-	9.7345E-13	1.2444E-05	4.7509E-05
CO	5.3029E-01	4.2810E-01	3.5313E-01
CO+	9.3559E-08	4.2816E-04	6.9922E-04
CO2	5.6331E-02	2.0480E-03	1.3606E-03
C2	1.4538E-10	7.0599E-04	1.8629E-03

 $P_1 = 1.00E+04 \text{ N/SQ-M.} \quad U_{S1} = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5086E+02	6.7390E+03	9.1633E+03
T	1.5552E+01	3.0404E+01	3.3668E+01
RHO	1.7684E+01	1.0927E+02	1.2756E+02
H	-5.4576E-01	-1.8895E+00	-2.3700E+00
A	4.8250E+00	7.5945E+00	8.1348E+00
S	1.8122E+00	1.9738E+00	2.0331E+00
Z	1.6394E+00	2.0284E+00	2.1337E+00
GAME	9.1311E-01	9.3521E-01	9.2118E-01
U	1.8153E+01	2.9426E+00	2.9216E+00

SPECIES	MOLE FRACTIONS		
E-	4.5539E-07	4.7725E-04	1.1788E-03
O	2.5043E-01	4.9470E-01	5.2170E-01
O+	1.0714E-08	1.0924E-04	2.3867E-04
O++	3.7415E-39	1.5857E-19	1.0027E-17
-O-	1.3486E-07	1.2491E-04	2.8237E-04
O2	1.3984E-01	1.2087E-02	9.3628E-03
O2+	6.0927E-07	3.5525E-05	4.6425E-05
O2-	6.5745E-08	5.3748E-06	9.7175E-06
C	7.3144E-07	2.7938E-02	7.0701E-02
C+	1.5741E-11	1.6820E-04	6.3578E-04
C++	3.5135E-31	1.5470E-14	4.6085E-13
C-	2.2405E-13	5.0084E-06	2.7690E-05
CO	5.2958E-01	4.6092E-01	3.9223E-01
CO+	3.6008E-08	3.0157E-04	5.7771E-04
CO2	8.0146E-02	2.7984E-03	1.7368E-03
C2	3.4957E-11	3.2936E-04	1.2763E-03

 $P_1 = 1.00E+04 \text{ N/SQ-M.} \quad U_{S1} = 5.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2202E+02	7.6443E+03	1.0351E+04
T	1.7069E+01	3.3225E+01	3.6125E+01
RHO	1.7290E+01	1.0774E+02	1.2657E+02
H	-7.9245E-01	-2.3473E+00	-2.8936E+00
A	5.3086E+00	8.0803E+00	8.6853E+00
S	1.8863E+00	2.0432E+00	2.1058E+00
Z	1.7689E+00	2.1355E+00	2.2638E+00
GAME	9.3340E-01	9.2020E-01	9.2239E-01
U	1.9523E+01	3.1386E+00	3.0886E+00

SPECIES	MOLE FRACTIONS		
E-	1.5857E-06	1.1644E-03	2.1863E-03
O	3.4209E-01	5.2290E-01	5.5009E-01
O+	9.2736E-08	2.2781E-04	4.1801E-04
O++	6.0957E-35	6.5394E-18	1.5353E-16
-O-	4.2393E-07	2.4697E-04	4.6176E-04
O2	9.2818E-02	8.5284E-03	7.6834E-03
O2+	1.7791E-06	4.1299E-05	5.5673E-05
O2-	1.1245E-07	7.6412E-06	1.3059E-05
C	5.8381E-06	7.0637E-02	1.1922E-01
C+	4.7178E-10	6.2935E-04	1.4514E-03
C++	9.7998E-28	3.6779E-13	4.0254E-12
C-	4.2978E-12	2.4087E-05	7.3225E-05
CO	5.2722E-01	3.9229E-01	3.1402E-01
CO+	2.4980E-07	5.4460E-04	8.0931E-04
CO2	3.7856E-02	1.5806E-03	1.0736E-03
C2	6.3747E-10	1.1758E-03	2.4396E-03

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1= 5.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.5921E+02	8.0428E+03	1.0858E+04
T	1.8007E+01	3.4373E+01	3.7262E+01
RHO	1.6948E+01	1.0658E+02	1.2488E+02
H	-9.2250E-01	-2.5871E+00	-3.1668E+00
A	5.5936E+00	8.3301E+00	8.9705E+00
S	1.9226E+00	2.0782E+00	2.1427E+00
Z	1.8324E+00	2.1954E+00	2.3334E+00
GAME	9.4825E-01	9.1955E-01	9.2548E-01
U	2.0195E+01	3.2169E+00	3.1710E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.0743E-06	1.5979E-03	2.8198E-03
O	3.8685E-01	5.3647E-01	5.6353E-01
O+	2.8886E-07	2.9995E-04	5.3584E-04
O++	9.9975E-33	2.5439E-17	4.9228E-16
O-	7.3011E-07	3.1597E-04	5.6191E-04
O2	6.7643E-02	7.6448E-03	7.0752E-03
O2+	2.9278E-06	4.4563E-05	6.0845E-05
O2-	1.3278E-07	8.7766E-06	1.4613E-05
O2C	1.8620E-05	9.3655E-02	1.4301E-01
C+	3.1624E-09	9.6818E-04	1.9969E-03
C++	8.2237E-26	1.1035E-12	9.8189E-12
C-	2.1460E-11	4.0051E-05	1.0479E-04
C0	5.2162E-01	3.5538E-01	2.7558E-01
C0+	7.1745E-07	6.4996E-04	9.0750E-04
C02	2.3861E-02	1.2470E-03	8.4291E-04
C2	3.3040E-09	1.6819E-03	2.9581E-03

P1 = 1.00E+04 N/SQ-M. US1= 6.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3609E+02	8.5911E+03	1.1532E+04
T	2.0692E+01	3.6408E+01	3.9481E+01
RHO	1.5848E+01	1.0155E+02	1.1781E+02
H	-1.1957E+00	-3.0832E+00	-3.7325E+00
A	6.3163E+00	8.8381E+00	9.5666E+00
S	1.9919E+00	2.1497E+00	2.2184E+00
Z	1.9397E+00	2.3236E+00	2.4793E+00
GAME	9.9399E-01	9.2333E-01	9.3498E-01
U	2.1494E+01	3.3599E+00	3.3444E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6356E-05	2.6701E-03	4.4594E-03
O	4.6017E-01	5.6239E-01	5.8836E-01
O+	3.5499E-06	4.8198E-04	8.5917E-04
O++	4.5782E-28	2.3832E-16	4.1616E-15
O-	2.4485E-06	4.6303E-04	7.7569E-04
O2	2.4497E-02	6.3691E-03	5.9501E-03
O2+	6.8903E-06	5.1349E-05	7.1587E-05
O2-	1.5804E-07	1.0679E-05	1.6921E-05
C	3.3297E-04	1.3924E-01	1.8809E-01
C+	2.9782E-07	1.8699E-03	3.4442E-03
C++	1.4960E-21	6.3936E-12	4.8392E-11
C-	1.1367E-09	8.3974E-05	1.8349E-04
C0	5.0805E-01	2.8215E-01	2.0257E-01
C0+	8.2299E-06	8.2455E-04	1.0606E-03
C02	6.9179E-03	7.8130E-04	4.9324E-04
C2	2.0496E-07	2.6123E-03	3.6626E-03

P1 = 1.00E+04 N/SQ-M. US1= 6.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9730E+02	8.3691E+03	1.1269E+04
T	1.9170E+01	3.5425E+01	3.8382E+01
RHO	1.6476E+01	1.0461E+02	1.2204E+02
H	-1.0570E+00	-2.8328E+00	-3.4481E+00
A	5.9263E+00	8.5829E+00	9.2654E+00
S	1.9580E+00	2.1136E+00	2.1803E+00
Z	1.8911E+00	2.2583E+00	2.4058E+00
GAME	9.6879E-01	9.2082E-01	9.2973E-01
U	2.0854E+01	3.2900E+00	3.2630E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.5014E-06	2.0966E-03	3.5708E-03
O	4.2749E-01	5.4967E-01	5.7638E-01
O+	9.6782E-07	3.8378E-04	6.8093E-04
O++	1.3695E-30	8.2646E-17	1.4750E-15
O-	1.2840E-06	3.8864E-04	6.6790E-04
O2	4.3947E-02	6.9611E-03	6.5086E-03
O2+	4.6584E-06	4.7970E-05	6.6245E-05
O2-	1.4736E-07	9.8194E-06	1.5955E-05
C	6.9550E-05	1.1667E-01	1.6615E-01
C+	2.6016E-08	1.3799E-03	2.6569E-03
C++	7.2715E-24	2.8057E-12	2.2406E-11
C-	1.3006E-10	6.0179E-05	1.4201E-04
C0	5.1479E-01	3.1843E-01	2.3813E-01
C0+	2.2806E-06	7.4366E-04	9.9250E-04
C02	1.3691E-02	9.8968E-04	6.5149E-04
C2	2.1530E-08	2.1750E-03	3.3789E-03

P1 = 1.00E+04 N/SQ-M. US1= 6.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7557E+02	8.7301E+03	1.1686E+04
T	2.2620E+01	3.7354E+01	4.0606E+01
RHO	1.5133E+01	9.7754E+01	1.1269E+02
H	-1.3388E+00	-3.3379E+00	-4.0224E+00
A	6.6825E+00	9.0978E+00	9.8803E+00
S	2.0240E+00	2.1862E+00	2.2569E+00
Z	1.9736E+00	2.3908E+00	2.5539E+00
GAME	1.0003E+00	9.2681E-01	9.4133E-01
U	2.2117E+01	3.4293E+00	3.4290E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.9680E-05	3.3341E-03	5.5380E-03
O	4.8134E-01	5.7452E-01	5.9942E-01
O+	1.2550E-05	5.9881E-04	1.0850E-03
O++	1.8180E-25	6.3792E-16	1.1550E-14
O-	5.1990E-06	5.3902E-04	8.8679E-04
O2	1.2115E-02	5.8306E-03	5.3910E-03
O2+	8.8161E-06	5.4737E-05	7.7029E-05
O2-	1.7415E-07	1.1352E-05	1.7529E-05
C	1.8770E-03	1.6111E-01	2.0878E-01
C+	3.8794E-06	2.4491E-03	4.3972E-03
C++	3.8815E-19	1.3575E-11	1.0220E-10
C-	1.3393E-08	1.1111E-04	2.2917E-04
C0	5.0136E-01	2.4697E-01	1.6891E-01
C0+	2.9821E-05	8.9287E-04	1.1123E-03
C02	3.1951E-03	6.1034E-04	3.6308E-04
C2	2.5095E-06	2.9671E-03	3.7984E-03

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00F+04 N/SQ-M, US1= 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1656E+02	8.9514E+03	1.1962E+04
T	2.4530E+01	3.8351E+01	4.1874E+01
RHO	1.4608E+01	9.4886E+01	1.0862E+02
H	-1.4864E+00	-3.6022E+00	-4.3256E+00
A	6.8764E+00	9.3736E+00	1.0224E+01
S	2.0541E+00	2.2223E+00	2.2950E+00
Z	1.9997E+00	2.4599E+00	2.6298E+00
GAME	9.6395E-01	9.3137E-01	9.4917E-01
U	2.2750E+01	3.5078E+00	3.5259E+00

SPECIES	MOLE FRACTIONS		
E-	1.3960E-04	4.1217E-03	6.9029E-03
O	4.9337E-01	5.8597E-01	6.0943E-01
O+	3.2313E-05	7.4510E-04	1.3913E-03
O++	2.0287E-23	1.7089E-15	3.4335E-14
O-	1.0598E-05	6.2467E-04	1.0157E-03
O2	6.6046E-03	5.3675E-03	4.8653E-03
O2+	9.6401E-06	5.8876E-05	8.3810E-05
O2-	2.0480E-07	1.2098E-05	1.8178E-05
C	7.9342E-03	1.8222E-01	2.2812E-01
C+	2.9780E-05	3.1431E-03	5.5903E-03
C++	3.1095E-17	2.8291E-11	2.2273E-10
C-	1.1510E-07	1.4326E-04	2.8281E-04
CO	4.9012E-01	2.1292E-01	1.3707E-01
CO+	7.8786E-05	9.5469E-04	1.1542E-03
CO2	1.6501E-03	4.7260E-04	2.5909E-04
C2	2.0265E-05	3.2458E-03	3.8044E-03

P1 = 1.00E+04 N/SQ-M, US1= 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0499E+02	9.9047E+03	1.3265E+04
T	2.7093E+01	4.0722E+01	4.5265E+01
RHO	1.4382E+01	9.3445E+01	1.0527E+02
H	-1.7965E+00	-4.1711E+00	-4.9985E+00
A	7.1621E+00	1.0005E+01	1.1057E+01
S	2.1113E+00	2.2921E+00	2.3699E+00
Z	2.0659E+00	2.6028E+00	2.7838E+00
GAME	9.1648E-01	9.4444E-01	9.7017E-01
U	2.4100E+01	3.7149E+00	3.8129E+00

SPECIES	MOLE FRACTIONS		
E-	4.8831E-04	6.2773E-03	1.1227E-02
O	5.1214E-01	6.0651E-01	6.2523E-01
O+	8.3274E-05	1.1951E-03	2.5097E-03
O++	3.1882E-21	1.4678E-14	4.6388E-13
O-	2.6837E-05	8.5204E-04	1.3785E-03
O2	3.5832E-03	4.6082E-03	3.8699E-03
O2+	1.0084E-05	7.1373E-05	1.0539E-04
O2-	2.9811E-07	1.4255E-05	2.0044E-05
C	3.5376E-02	2.2147E-01	2.6137E-01
C+	2.2853E-04	5.0396E-03	9.2293E-03
C++	2.9494E-15	1.3129E-10	1.3458E-09
C-	1.7836E-06	2.3091E-04	4.3008E-04
CO	4.4691E-01	1.4883E-01	7.9899E-02
CO+	1.9484E-04	1.0684E-03	1.2116E-03
CO2	7.8161E-04	2.7006E-04	1.1344E-04
C2	1.7320E-04	3.5556E-03	3.4039E-03

P1 = 1.00E+04 N/SQ-M, US1= 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5977E+02	9.3618E+03	1.2516E+04
T	2.5992E+01	3.9470E+01	4.3419E+01
RHO	1.4400E+01	9.3719E+01	1.0647E+02
H	-1.6390E+00	-3.8804E+00	-4.6529E+00
A	7.0121E+00	9.6758E+00	1.0617E+01
S	2.0830E+00	2.2575E+00	2.3328E+00
Z	2.0299E+00	2.5308E+00	2.7074E+00
GAME	9.3192E-01	9.3722E-01	9.5893E-01
U	2.3414E+01	3.6032E+00	3.6616E+00

SPECIES	MOLE FRACTIONS		
E-	2.9183E-04	5.0831E-03	8.7332E-03
O	5.0277E-01	5.9649E-01	6.1824E-01
O+	5.7369E-05	9.3755E-04	1.8402E-03
O++	4.1980E-22	4.8589E-15	1.1776E-13
O-	1.8089E-05	7.2875E-04	1.1798E-03
O2	4.5146E-03	4.9753E-03	4.3684E-03
O2+	9.8770E-06	6.4436E-05	9.3250E-05
O2-	2.4796E-07	1.3105E-05	1.9111E-05
C	1.9853E-02	2.0244E-01	2.4601E-01
C+	1.0447E-04	3.9916E-03	7.1586E-03
C++	4.9258E-16	6.0176E-11	5.2653E-10
C-	4.8958E-07	1.8294E-04	3.4995E-04
CO	4.7110E-01	1.8006E-01	1.0696E-01
CO+	1.3894E-04	1.0143E-03	1.1900E-03
CO2	1.0599E-03	3.6151E-04	1.7658E-04
C2	7.6058E-05	3.4506E-03	3.6805E-03

P1 = 1.00E+04 N/SQ-M, US1= 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5189E+02	1.0523E+04	1.4138E+04
T	2.7988E+01	4.2119E+01	4.7463E+01
RHO	1.4452E+01	9.3402E+01	1.0426E+02
H	-1.9587E+00	-4.4721E+00	-5.3623E+00
A	7.3216E+00	1.0363E+01	1.1536E+01
S	2.1393E+00	2.3263E+00	2.4065E+00
Z	2.1061E+00	2.6750E+00	2.8570E+00
GAME	9.0944E-01	9.5310E-01	9.8138E-01
U	2.4798E+01	3.8427E+00	3.9887E+00

SPECIES	MOLE FRACTIONS		
E-	7.1903E-04	7.7893E-03	1.4710E-02
O	5.2174E-01	6.1521E-01	6.2976E-01
O+	1.1000E-04	1.5461E-03	3.5362E-03
O++	1.4507E-20	4.6989E-14	2.0845E-12
O-	3.6605E-05	9.9433E-04	1.6103E-03
O2	3.0766E-03	4.2346E-03	3.3544E-03
O2+	1.0391E-05	7.9634E-05	1.2041E-04
O2-	3.5311E-07	1.5400E-05	2.0689E-05
C	5.2649E-02	2.3890E-01	2.7332E-01
C+	3.9381E-04	6.3479E-03	1.1994E-02
C++	1.0758E-14	2.9467E-10	3.7182E-09
C-	2.5769E-06	2.8733E-04	5.2132E-04
CO	4.2010E-01	1.1975E-01	5.6799E-02
CO+	2.4436E-04	1.1217E-03	1.2116E-03
CO2	6.1822E-04	1.9477E-04	6.7648E-05
C2	3.0210E-04	3.5366E-03	2.9783E-03

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 7.40\text{E}+03 \text{ M/SEC}$
 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 7.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.0032E+02	1.1188E+04	1.5097E+04
T	2.8766E+01	4.3690E+01	5.0040E+01
RHO	1.4562E+01	9.3252E+01	1.0318E+02
H	-2.1256E+00	-4.7823E+00	-5.7432E+00
A	7.4858E+00	1.0749E+01	1.2032E+01
S	2.1674E+00	2.3600E+00	2.4426E+00
Z	2.1493E+00	2.7461E+00	2.9242E+00
GAME	9.0633E-01	9.6311E-01	9.8932E-01
U	2.5501E+01	3.9878E+00	4.1873E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5018E+02	1.1882E+04	1.6122E+04
T	2.9473E+01	4.5477E+01	5.2902E+01
RHO	1.4687E+01	9.2836E+01	1.0215E+02
H	-2.2971E+00	-5.1010E+00	-6.1392E+00
A	7.6531E+00	1.1165E+01	1.2504E+01
S	2.1955E+00	2.3933E+00	2.4774E+00
Z	2.1950E+00	2.8145E+00	2.9833E+00
GAME	9.0532E-01	9.7392E-01	9.9070E-01
U	2.6207E+01	4.1516E+00	4.4010E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.8115E-04	9.7474E-03	1.9561E-02
O	5.3146E-01	6.2250E-01	6.3109E-01
O+	1.3847E-04	2.0362E-03	5.1172E-03
O++	5.0532E-20	1.6071E-13	1.0391E-11
D-	4.7388E-05	1.1562E-03	1.8680E-03
O2	2.7568E-03	3.8395E-03	2.8401E-03
O2+	1.0804E-05	8.9310E-05	1.3835E-04
O2-	4.1235E-07	1.6410E-05	2.0841E-05
O2++	7.0718E-02	2.5428E-01	2.8084E-01
C	5.9549E-04	8.0035E-03	1.5626E-02
C+	3.0121E-14	6.8583E-10	1.0899E-08
C-	4.4256E-06	3.5216E-04	6.1785E-04
CO	3.9204E-01	9.3321E-02	3.8604E-02
CO+	2.8861E-04	1.1431E-03	1.1860E-03
CO2	5.0675E-04	1.3415E-04	3.7521E-05
C2	4.5195E-04	3.3812E-03	2.4548E-03

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2753E-03	1.2338E-02	2.5949E-02
O	5.4119E-01	6.2799E-01	6.2881E-01
O+	1.6960E-04	2.7380E-03	7.4337E-03
O++	1.4804E-19	5.9598E-13	5.2122E-11
D-	5.9247E-05	1.3381E-03	2.1318E-03
O2	2.5345E-03	3.4206E-03	2.3723E-03
O2+	1.1313E-05	1.0058E-04	1.5856E-04
O2-	4.7559E-07	1.7169E-05	2.0485E-05
C	8.9093E-02	2.6703E-01	2.8350E-01
C+	8.3233E-04	1.0123E-02	2.0079E-02
C-	7.1505E-14	1.6710E-09	3.1779E-08
CO	6.8814E-06	4.2468E-04	7.0873E-04
CO+	3.6346E-01	7.0139E-02	2.5752E-02
CO2	3.2866E-04	1.1563E-03	1.1379E-03
C2	4.7369E-04	8.7437E-05	2.0082E-05
	6.1375E-04	3.0932E-03	1.9293E-03

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 7.80\text{E}+03 \text{ M/SEC}$
 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 8.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0014E+03	1.2595E+04	1.7192E+04
T	3.0138E+01	4.7515E+01	5.6000E+01
RHO	1.4816E+01	9.2088E+01	1.0110E+02
H	-2.4732E+00	-5.4278E+00	-6.5472E+00
A	7.8235E+00	1.1601E+01	1.2947E+01
S	2.2237E+00	2.4259E+00	2.5121E+00
Z	2.2428E+00	2.8785E+00	3.0367E+00
GAME	9.0553E-01	9.8396E-01	9.8574E-01
U	2.6913E+01	4.3358E+00	4.6172E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0540E+03	1.3320E+04	1.8295E+04
T	3.0779E+01	4.9811E+01	5.9082E+01
RHO	1.4940E+01	9.1059E+01	1.0039E+02
H	-2.6539E+00	-5.7623E+00	-6.9648E+00
A	7.9976E+00	1.2038E+01	1.3349E+01
S	2.2521E+00	2.4578E+00	2.5451E+00
Z	2.2922E+00	2.9366E+00	3.0845E+00
GAME	9.0658E-01	9.9066E-01	9.7785E-01
U	2.7620E+01	4.5375E+00	4.8254E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6041E-03	1.5801E-02	3.4060E-02
O	5.5084E-01	6.3123E-01	6.2298E-01
O+	2.0438E-04	3.7597E-03	1.0710E-02
O++	3.9267E-19	2.3935E-12	2.5041E-10
D-	7.2268E-05	1.5382E-03	2.3842E-03
O2	2.3662E-03	2.9875E-03	1.9650E-03
O2+	1.1909E-05	1.1360E-04	1.8032E-04
O2-	5.4263E-07	1.7569E-05	1.9660E-05
C	1.0748E-01	2.7652E-01	2.8197E-01
C+	1.1053E-03	1.2837E-02	2.5287E-02
C++	1.5345E-13	4.2603E-09	8.9355E-08
C-	9.9946E-06	5.0259E-04	7.8514E-04
CO	3.3481E-01	5.0795E-02	1.7118E-02
CO+	3.6533E-04	1.1494E-03	1.0722E-03
CO2	3.5756E-04	5.3719E-05	1.0587E-05
C2	7.7950E-04	2.6983E-03	1.4610E-03

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.9716E-03	2.0387E-02	4.3272E-02
O	5.6034E-01	6.3178E-01	6.1446E-01
O+	2.4384E-04	5.2406E-03	1.4843E-02
O++	9.7568E-19	1.0106E-11	1.0174E-09
D-	8.6546E-05	1.7502E-03	2.6006E-03
O2	2.2302E-03	2.5621E-03	1.6444E-03
O2+	1.2589E-05	1.2835E-04	2.0170E-04
O2-	6.1320E-07	1.7555E-05	1.8626E-05
C	1.2570E-01	2.8222E-01	2.7756E-01
C+	1.4171E-03	1.6245E-02	3.0685E-02
C++	3.0777E-13	1.1161E-08	2.2356E-07
C-	1.3818E-05	5.8135E-04	8.3913E-04
CO	3.0635E-01	3.5684E-02	1.1771E-02
CO+	3.9908E-04	1.1221E-03	1.0008E-03
CO2	3.0276E-04	3.1358E-05	5.8395E-06
C2	9.4253E-04	2.2469E-03	1.1004E-03

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 8.20\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1079E+03	1.4055E+04	1.9420E+04
T	3.1408E+01	5.2318E+01	6.2092E+01
RHD	1.5054E+01	8.9892E+01	9.9944E+01
H	-2.8191E+00	-5.1047E+00	-7.3903E+00
A	8.1760E+00	1.2453E+01	1.3728E+01
S	2.2806E+00	2.4889E+00	2.5770E+00
Z	2.3433E+00	2.9885E+00	3.1294E+00
GAME	9.0828E-01	9.9194E-01	9.6988E-01
U	2.8726E+01	4.7501E+00	5.0208E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3838E-03	2.6242E-02	5.3277E-02
O	5.6963E-01	6.2947E-01	6.0396E-01
O+	2.8925E-04	7.3199E-03	1.9780E-02
O++	2.3139E-18	4.2661E-11	3.5067E-09
D-	1.0219E-04	1.9627E-03	2.7753E-03
O2	2.1141E-03	2.1718E-03	1.3918E-03
O2+	1.3350E-05	1.4448E-04	2.2177E-04
O2-	6.8690E-07	1.7158E-05	1.7484E-05
C	1.4361E-01	2.8408E-01	2.7155E-01
C+	1.7723E-03	2.0334E-02	3.6010E-02
C++	5.8837E-13	2.9032E-08	4.9968E-07
C-	1.8411E-05	6.5443E-04	8.7131E-04
CO	2.7828E-01	2.4710E-02	8.3842E-03
CO+	4.3019E-04	1.0778E-03	9.2841E-04
CO2	2.5613E-04	1.7788E-05	3.3834E-06
C2	1.0970E-03	1.8018E-03	8.3179E-04

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 8.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2196E+03	1.5554E+04	2.1709E+04
T	3.2670E+01	5.7601E+01	6.7809E+01
RHD	1.5241E+01	8.7737E+01	9.9541E+01
H	-3.2233E+00	-6.8136E+00	-8.2641E+00
A	8.5492E+00	1.3191E+01	1.4452E+01
S	2.3382E+00	2.5487E+00	2.6381E+00
Z	2.4494E+00	3.0777E+00	3.2162E+00
GAME	9.1335E-01	9.8156E-01	9.5770E-01
U	2.9734E+01	5.1724E+00	5.3747E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.3762E-03	4.1421E-02	7.4606E-02
O	5.8743E-01	6.1725E-01	5.7912E-01
O+	4.0461E-04	1.3563E-02	3.1677E-02
O++	1.7077E-17	6.0002E-10	2.7204E-08
D-	1.3814E-04	2.3379E-03	3.0006E-03
O2	1.9118E-03	1.5591E-03	1.0267E-03
O2+	1.5127E-05	1.7802E-04	2.5553E-04
O2-	8.4134E-07	1.5631E-05	1.5108E-05
C	1.7817E-01	2.7881E-01	2.5770E-01
C+	2.6408E-03	2.9834E-02	4.5778E-02
C++	1.9773E-12	1.6525E-07	1.8742E-06
C-	3.0158E-05	7.6151E-04	8.8264E-04
CO	2.2386E-01	1.2214E-02	4.6609E-03
CO+	4.8480E-04	9.6135E-04	7.8967E-04
CO2	1.8022E-04	5.8771E-06	1.2982E-06
C2	1.3597E-03	1.0959E-03	4.8745E-04

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 8.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1632E+03	1.4799E+04	2.0560E+04
T	3.7035E+01	5.4945E+01	6.5001E+01
RHD	1.5156E+01	8.8750E+01	9.9687E+01
H	-3.0789E+00	-6.4550E+00	-7.8234E+00
A	8.3595E+00	1.2837E+01	1.4094E+01
S	2.3093E+00	2.5192E+00	2.6079E+00
Z	2.3957E+00	3.0349E+00	3.1730E+00
GAME	9.1054E-01	9.8814E-01	9.6307E-01
U	2.9031E+01	4.9643E+00	5.2033E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.8485E-03	3.3322E-02	6.3783E-02
O	5.7868E-01	6.2447E-01	5.9206E-01
O+	7.4214E-04	1.0087E-02	2.5422E-02
O++	5.3185E-18	1.6889E-10	1.0402E-08
D-	1.1934E-03	2.1622E-03	2.9078E-03
O2	2.0098E-03	1.8360E-03	1.1906E-03
O2+	1.4194E-05	1.6130E-04	2.3985E-04
O2-	7.6319E-07	1.6478E-05	1.6302E-05
C	1.6113E-01	2.8264E-01	2.6476E-01
C+	2.1773E-03	2.4945E-02	4.1070E-02
C++	1.0887E-12	7.1952E-08	1.0093E-06
C-	2.3834E-05	7.1566E-04	8.8462E-04
CO	2.5074E-01	1.7201E-02	6.1689E-03
CO+	4.5876E-04	1.0223E-03	8.5765E-04
CO2	2.1571E-04	1.0101E-05	2.0550E-06
C2	1.7377E-03	1.4117E-03	6.3395E-04

 $P_1 = 1.00\text{E}+04 \text{ N/SQ-M.} \quad US_1 = 8.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2774E+03	1.6316E+04	2.2860E+04
T	3.3323E+01	6.0222E+01	7.0549E+01
RHD	1.5308E+01	8.6880E+01	9.9397E+01
H	-3.4221E+00	-7.1803E+00	-8.7125E+00
A	8.7462E+00	1.3527E+01	1.4810E+01
S	2.3671E+00	2.5776E+00	2.6680E+00
Z	2.5041E+00	3.1183E+00	3.2599E+00
GAME	9.1675E-01	9.7437E-01	9.5367E-01
U	3.0435E+01	5.3702E+00	5.5373E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.9815E-03	5.0291E-02	8.5729E-02
O	5.9583E-01	6.0828E-01	5.6528E-01
O+	4.7946E-04	1.7714E-02	3.8524E-02
O++	2.7497E-17	1.8844E-09	6.4549E-08
D-	1.5877E-04	2.4844E-03	3.0565E-03
O2	1.8162E-03	1.3341E-03	8.8903E-04
O2+	1.6155E-05	1.9396E-04	2.6859E-04
O2-	9.2039E-07	1.4702E-05	1.3901E-05
C	1.9464E-01	2.7347E-01	2.5054E-01
C+	3.1749E-03	3.4774E-02	5.0145E-02
C++	3.5637E-12	3.4871E-07	3.2633E-06
C-	3.7463E-05	7.9143E-04	8.6835E-04
CO	1.9775E-01	8.8980E-03	3.5872E-03
CO+	5.0821E-04	9.9886E-04	7.2428E-04
CO2	1.4886E-04	3.5409E-06	8.4302E-07
C2	1.4586E-03	8.5072E-04	3.7696E-04

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1= 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3363E+03	1.7080E+04	2.4005E+04
T	3.4003E+01	6.2780E+01	7.3179E+01
RHO	1.5354E+01	8.6150E+01	9.9303E+01
H	-3.6256E+00	-7.5552E+00	-9.1690E+00
A	8.9523E+00	1.3852E+01	1.5161E+01
S	2.3962E+00	2.6059E+00	2.6968E+00
Z	2.5597E+00	3.1981E+00	3.3034E+00
GAME	9.2080E-01	9.6778E-01	9.5088E-01
U	3.1133E+01	5.5566E+00	5.6934E+00

SPECIES	MOLE FRACTIONS		
E-	4.6840E-03	5.9715E-02	9.6815E-02
O	6.0385E-01	5.9798E-01	5.5102E-01
O+	5.7058E-04	2.2687E-02	4.5729E-02
O++	6.3092E-17	5.2571E-09	1.3907E-07
O-	1.8147E-04	2.5998E-03	3.0799E-03
O2	1.7202E-03	1.1506E-03	7.7434E-04
O2+	1.7290E-05	2.0862E-04	2.7877E-04
O2-	9.9910E-07	1.3741E-05	1.2738E-05
C	2.1045E-01	2.6729E-01	2.4359E-01
C+	3.7957E-03	3.9601E-02	5.4071E-02
C++	6.4167E-12	6.7900E-07	5.3344E-06
C-	4.5840E-05	8.0675E-04	8.4553E-04
CO	1.7250E-01	6.6492E-03	2.8166E-03
CO+	5.2877E-04	8.3706E-04	6.6343E-04
CO2	1.2113E-04	2.2114E-06	5.6482E-07
C2	1.5303E-03	6.6329E-04	2.9473E-04

P1 = 1.00E+04 N/SQ-M. US1= 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3965E+03	1.7842E+04	2.5137E+04
T	3.4721E+01	6.5264E+01	7.5768E+01
RHO	1.5375E+01	8.5496E+01	9.9095E+01
H	-3.8335E+00	-7.9380E+00	-9.6337E+00
A	9.1692E+00	1.4171E+01	1.5516E+01
S	2.4253E+00	2.6337E+00	2.7256E+00
Z	2.6159E+00	3.1975E+00	3.3479E+00
GAME	9.2565E-01	9.6224E-01	9.4909E-01
U	3.1828E+01	5.7322E+00	5.8447E+00

SPECIES	MOLE FRACTIONS		
E-	5.5107E-03	6.9932E-02	1.0810E-01
O	6.1142E-01	5.8664E-01	5.3613E-01
O+	6.8347E-04	2.7823E-02	5.3400E-02
O++	1.4696E-16	1.3202E-08	2.8116E-07
O-	2.0652E-04	2.6849E-03	3.0726E-03
O2	1.6213E-03	9.9905E-04	6.7430E-04
O2+	1.8548E-05	2.2164E-04	2.8606E-04
O2-	1.0759E-06	1.2770E-05	1.1578E-05
C	2.2551E-01	2.6068E-01	2.3674E-01
C+	4.5255E-03	4.4215E-02	5.7692E-02
C++	1.1624E-11	1.2319E-06	8.3702E-06
C-	5.5398E-05	8.0955E-04	8.1540E-04
CO	1.4824E-01	5.0801E-03	2.2327E-03
CO+	5.4619E-04	7.7698E-04	6.0534E-04
CO2	9.6694E-05	1.4260E-06	3.8390E-07
C2	1.5709E-03	5.2017E-04	2.3115E-04

P1 = 1.00E+04 N/SQ-M. US1= 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4578E+03	1.8591E+04	2.6244E+04
T	3.5493E+01	6.7675E+01	7.8310E+01
RHO	1.5369E+01	8.4856E+01	9.8759E+01
H	-4.0459E+00	-8.3286E+00	-1.0106E+01
A	9.3997E+00	1.4486E+01	1.5874E+01
S	2.4544E+00	2.6612E+00	2.7540E+00
Z	2.6724E+00	3.2373E+00	3.3934E+00
GAME	9.3149E-01	9.5782E-01	9.4820E-01
U	3.2519E+01	5.8984E+00	5.9929E+00

SPECIES	MOLE FRACTIONS		
E-	6.5021E-03	7.9635E-02	1.1947E-01
O	6.1845E-01	5.7449E-01	5.2080E-01
O+	8.2665E-04	3.3667E-02	6.1425E-02
O++	3.5716E-16	3.0279E-08	5.3634E-07
O-	2.3428E-04	2.7410E-03	3.0378E-03
O2	1.5175E-03	8.7163E-04	5.8691E-04
O2+	1.9951E-05	2.3274E-04	2.9040E-04
O2-	1.1486E-06	1.1801E-05	1.0443E-05
C	2.3968E-01	2.5390E-01	2.3006E-01
C+	5.3971E-03	4.8567E-02	6.1010E-02
C++	2.1503E-11	2.1041E-06	1.2659E-05
C-	6.6260E-05	8.0197E-04	7.8009E-04
CO	1.2509E-01	3.9529E-03	1.7851E-03
CO+	5.6002E-04	7.1910E-04	5.5063E-04
CO2	7.5308E-05	9.4460E-07	2.6441E-07
C2	1.5769E-03	4.1030E-04	1.8202E-04

P1 = 1.00E+04 N/SQ-M. US1= 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5201E+03	1.9319E+04	2.7312E+04
T	3.6336E+01	6.9975E+01	8.0826E+01
RHO	1.5331E+01	8.4259E+01	9.8222E+01
H	-4.2628E+00	-8.7265E+00	-1.0587E+01
A	9.6469E+00	1.4794E+01	1.6237E+01
S	2.4835E+00	2.6878E+00	2.7825E+00
Z	2.7289E+00	3.2767E+00	3.4403E+00
GAME	9.3854E-01	9.5449E-01	9.4809E-01
U	3.3205E+01	6.0540E+00	6.1388E+00

SPECIES	MOLE FRACTIONS		
E-	7.7141E-03	8.9717E-02	1.3100E-01
O	6.2484E-01	5.6194E-01	5.0500E-01
O+	1.0125E-03	3.9825E-02	6.9813E-02
O++	9.0428E-16	6.3348E-08	9.7778E-07
O-	2.6520E-04	2.7709E-03	2.9772E-03
O2	1.4073E-03	7.6540E-04	5.0933E-04
O2+	2.1527E-05	2.4171E-04	2.9175E-04
O2-	1.2146E-06	1.0872E-05	9.3314E-06
C	2.5280E-01	2.4726E-01	2.2348E-01
C+	6.4553E-03	5.2547E-02	6.4088E-02
C++	4.0791E-11	3.3836E-06	1.8614E-05
C-	7.8569E-05	7.8673E-04	7.4065E-04
CO	1.0324E-01	3.1377E-03	1.4337E-03
CO+	5.6970E-04	6.6502E-04	4.9885E-04
CO2	5.6870E-05	6.4525E-07	1.8331E-07
C2	1.5453E-03	3.2706E-04	1.4352E-04

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1= 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5836E+03	2.0010E+04	2.8326E+04
T	3.7273E+01	7.2299E+01	8.3279E+01
RHO	1.5256E+01	8.3398E+01	9.7524E+01
M	-4.4841E+00	-9.1311E+00	-1.1076E+01
A	9.9150E+00	1.5113E+01	1.6600E+01
S	2.5125E+00	2.7155E+00	2.8105E+00
Z	2.7848E+00	3.3186E+00	3.4877E+00
GAMF	9.4712E-01	9.5197E-01	9.4868E-01
U	3.3885E+01	6.2083E+00	6.2837E+00

SPECIES	MOLE FRACTIONS		
F-	9.2324E-03	1.0043E-01	1.4243E-01
O	6.3043E-01	5.4827E-01	4.8911E-01
O+	1.7611E-03	4.6663E-02	7.8340E-02
O++	2.4509E-15	1.2775E-07	1.6965E-06
O-	2.9982E-04	2.7730E-03	2.8959E-03
O2	1.2894E-03	6.6842E-04	4.4171E-04
O2+	2.3317E-05	2.4849E-04	2.9032E-04
O2-	1.2705E-06	9.8910E-06	8.2821E-06
C	7.6460E-01	2.4037E-01	2.1713E-01
C+	7.7671E-03	5.6438E-02	6.6899E-02
C++	8.0581E-11	5.3144E-06	2.6549E-05
C-	9.2475E-05	7.6317E-04	6.9934E-04
CO	8.2911E-02	2.4921E-03	1.1598E-03
CO+	5.7451E-04	6.1068E-04	4.5115E-04
CO2	4.1308E-05	4.4018E-07	1.2857E-07
C2	1.4740E-03	2.5902E-04	1.1380E-04

P1 = 1.00E+04 N/SQ-M. US1= 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8125E+03	2.1967E+04	3.1180E+04
T	4.1725E+01	7.9864E+01	9.1681E+01
RHO	1.4654E+01	7.9252E+01	9.2778E+01
M	-5.2933E+00	-1.0593E+01	-1.2838E+01
A	1.1052E+01	1.6220E+01	1.7919E+01
S	2.6115E+00	2.8100E+00	2.9087E+00
Z	2.9643E+00	3.4707E+00	3.6654E+00
GAMF	9.8751E-01	9.4915E-01	9.5542E-01
U	3.6201E+01	6.7002E+00	6.7844E+00

SPECIES	MOLE FRACTIONS		
E-	1.9271E-02	1.3818E-01	1.8315E-01
O	6.3989E-01	4.9791E-01	4.3146E-01
O+	3.2695E-03	7.2746E-02	1.0975E-01
O++	1.6843E-13	9.5713E-07	9.1086E-06
O-	4.5749E-04	2.6077E-03	2.4701E-03
O2	8.2775E-04	4.1683E-04	2.5801E-04
O2+	3.2077E-05	2.5346E-04	2.6483E-04
O2-	1.3243E-06	6.7357E-06	5.0214E-06
C	2.8976E-01	2.1750E-01	1.9543E-01
C+	1.6040E-02	6.7957E-02	7.5669E-02
C++	1.3809E-09	1.9510E-05	7.9679E-05
C-	1.5412E-04	6.4867E-04	5.4537E-04
CO	2.8792E-02	1.1931E-03	5.5548E-04
CO+	5.4181E-04	4.4515E-04	3.0797E-04
CO2	8.8282E-06	1.2834E-07	3.7362E-08
C2	9.5161E-04	1.1888E-04	5.0570E-05

P1 = 1.00E+04 N/SQ-M. US1= 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6479E+03	2.0653E+04	2.9266E+04
T	3.8333E+01	7.4520E+01	8.5717E+01
RHO	1.5141E+01	8.2470E+01	9.6535E+01
M	-4.7099E+00	-9.5421E+00	-1.1572E+01
A	1.0208E+01	1.5427E+01	1.6970E+01
S	2.5412E+00	2.7424E+00	2.8338E+00
Z	2.8394E+00	3.3605E+00	3.5368E+00
GAMF	9.5743E-01	9.5032E-01	9.4991E-01
U	3.4558E+01	6.3543E+00	6.4281E+00

SPECIES	MOLE FRACTIONS		
E-	1.1183E-02	1.1103E-01	1.5401E-01
O	6.3501E-01	5.3441E-01	4.7285E-01
O+	1.6042E-03	5.3718E-02	8.7138E-02
O++	7.2292E-15	2.3997E-07	2.8488E-06
O-	3.3879E-04	2.7523E-03	2.7937E-03
O2	1.1635E-03	5.8569E-04	3.8112E-04
O2+	2.5374E-05	2.5288E-04	2.8607E-04
O2-	1.3120E-06	8.9591E-06	7.2715E-06
C	2.7476E-01	2.3373E-01	2.1084E-01
C+	9.4279E-03	5.9983E-02	6.9557E-02
C++	1.6770E-10	7.9746E-06	3.7145E-05
C-	1.0810E-04	7.3507E-04	6.5597E-04
CO	6.4410E-02	2.0071E-03	9.3893E-04
CO+	5.7361E-04	5.6029E-04	4.0627E-04
CO2	2.8599E-05	3.0689E-07	9.0240E-08
C2	1.3630E-03	2.0694E-04	9.0195E-05

P1 = 1.00E+04 N/SQ-M. US1= 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9824E+03	2.2959E+04	3.2639E+04
T	4.6143E+01	8.4912E+01	9.7603E+01
RHO	1.4008E+01	7.5390E+01	8.7909E+01
M	-5.9039E+00	-1.1679E+01	-1.4154E+01
A	1.1889E+01	1.7021E+01	1.8917E+01
S	2.6782E+00	2.8763E+00	2.9789E+00
Z	3.0670E+00	3.5864E+00	3.8039E+00
GAMF	9.9884E-01	9.5131E-01	9.6387E-01
U	3.7797E+01	7.0334E+00	7.1633E+00

SPECIES	MOLE FRACTIONS		
E-	3.4513E-02	1.6533E-01	2.1245E-01
O	6.3168E-01	4.6027E-01	3.8941E-01
O+	7.2609E-03	9.2850E-02	1.3287E-01
O++	5.3882E-12	3.0427E-06	2.5371E-05
O-	5.9328E-04	2.3765E-03	2.0948E-03
O2	5.3917E-04	2.9395E-04	1.6915E-04
O2+	4.1027E-05	2.4208E-04	2.3324E-04
O2-	1.2027E-06	4.8694E-06	3.2705E-06
C	2.8569E-01	2.0216E-01	1.8027E-01
C+	2.7529E-02	7.4735E-02	8.1284E-02
C++	1.3648E-08	4.1518E-05	1.5840E-04
C-	2.0027E-04	5.5557E-04	4.4026E-04
CO	1.0926E-02	7.2925E-04	3.2720E-04
CO+	4.7592E-04	3.4923E-04	2.2848E-04
CO2	2.1186E-06	5.6053E-08	1.5346E-08
C2	5.4072E-04	6.9608E-05	2.8322E-05

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1601E+03	2.4056E+04	3.4278E+04
T	5.0728E+01	8.9963E+01	1.0378E+02
RHO	1.3479E+01	7.2115E+01	8.3618E+01
M	-6.5426E+00	-1.2814E+01	-1.5540E+01
A	1.2578E+01	1.7859E+01	1.9990E+01
S	2.7410E+00	2.9408E+00	3.0475E+00
Z	3.1591E+00	3.7080E+00	3.9500E+00
GAME	9.8729E-01	9.5609E-01	9.7476E-01
U	3.9396E+01	7.3782E+00	7.5689E+00

SPECIES	MOLE FRACTIONS		
E-	5.6153E-02	1.9226E-01	2.4129E-01
O	6.1213E-01	4.2199E-01	3.4771E-01
O+	1.4481E-02	1.1368E-01	1.5587E-01
O++	1.0649E-10	8.4451E-06	6.4832E-05
O-	7.0622E-04	2.1115E-03	1.7231E-03
O2	3.6023E-04	2.0570E-04	1.0815E-04
O2+	5.0420E-05	2.2393E-04	1.9809E-04
O2+	1.0374E-06	3.4457E-06	2.0510E-06
O2+	2.6848E-01	1.8772E-01	1.6561E-01
C+	4.2152E-02	8.0492E-02	8.6406E-02
C++	9.9823E-08	8.1289E-05	3.0058E-04
C-	2.2987E-04	4.6793E-04	3.4870E-04
CO	4.5440E-03	4.5319E-04	1.9187E-04
CO+	4.0634E-04	2.7152E-04	1.6711E-04
CO2	5.7177E-07	2.5223E-08	6.2793E-09
C2	2.9626E-04	4.1366E-05	1.5873E-05

P1 = 1.00E+04 N/SQ-M. US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3470E+03	2.5426E+04	3.6370E+04
T	5.4949E+01	9.5257E+01	1.1044E+02
RHO	1.3132E+01	6.9565E+01	8.0268E+01
M	-7.2103E+00	-1.4006E+01	-1.7013E+01
A	1.3197E+01	1.8764E+01	2.1152E+01
S	2.8007E+00	3.0044E+00	3.1145E+00
Z	3.2524E+00	3.8370E+00	4.1027E+00
GAME	9.7456E-01	9.6333E-01	9.8741E-01
U	4.1022E+01	7.7548E+00	8.0201E+00

SPECIES	MOLE FRACTIONS		
E-	8.0821E-02	2.1912E-01	2.6936E-01
O	5.8628E-01	3.8312E-01	3.0711E-01
O+	2.4642E-02	1.9508E-01	1.7814E-01
O++	1.0744E-09	2.1675E-05	1.5657E-04
O-	7.8061E-04	1.8310E-03	1.3779E-03
O2	2.5658E-04	1.4147E-04	6.7277E-05
O2+	5.8647E-05	2.0122E-04	1.6276E-04
O2-	8.8551E-07	2.3758E-06	1.2410E-06
C	2.4736E-01	1.7392E-01	1.5140E-01
C+	5.6795E-02	8.5503E-02	9.1159E-02
C++	4.2647E-07	1.5210E-04	5.5463E-04
C-	2.4086E-04	3.8783E-04	2.7139E-04
CO	2.2402E-03	1.5210E-04	1.1134E-04
CO+	3.4642E-04	2.0826E-04	1.2000E-04
CO2	1.9581E-07	1.1394E-08	2.5384E-09
C2	1.7162E-04	2.4610E-05	8.8538E-06

P1 = 1.00E+04 N/SQ-M. US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5429E+03	2.7023E+04	3.8859E+04
T	5.8800E+01	1.0074E+02	1.1764E+02
RHO	1.2910E+01	6.7565E+01	7.7522E+01
M	-7.9070E+00	-1.5253E+01	-1.8577E+01
A	1.3792E+01	1.9723E+01	2.2393E+01
S	2.8584E+00	3.0657E+00	3.1798E+00
Z	3.3499E+00	3.9700E+00	4.2609E+00
GAME	9.6571E-01	9.7258E-01	1.0003E+00
U	4.2671E+01	8.1643E+00	8.5195E+00

SPECIES	MOLE FRACTIONS		
E-	1.0648E-01	2.4506E-01	2.9635E-01
O	5.5697E-01	3.4523E-01	2.6847E-01
O+	3.7186E-02	1.5606E-01	1.9899E-01
O++	6.6095E-09	5.1385E-05	3.5982E-04
O-	8.2082E-04	1.5537E-03	1.0705E-03
O2	1.9135E-04	9.5918E-05	4.0608E-05
O2+	6.5148E-05	1.7602E-04	1.2928E-04
O2-	7.5313E-07	1.6009E-06	7.2182E-07
C	2.2640E-01	1.6093E-01	1.3752E-01
C+	6.9992E-02	8.9894E-02	9.5705E-02
C++	1.3630E-06	2.7215E-04	9.9992E-04
C-	2.3898E-04	3.1757E-04	2.0735E-04
CO	1.2533E-03	1.7582E-04	6.3654E-05
CO+	2.9557E-04	1.5825E-04	8.4531E-05
CO2	8.0238E-08	5.1951E-09	1.0066E-09
C2	1.0467E-04	1.4754E-05	4.8960E-06

P1 = 1.00E+04 N/SQ-M. US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7477E+03	2.8780E+04	4.1657E+04
T	6.2376E+01	1.0650E+02	1.2536E+02
RHO	1.2763E+01	6.5795E+01	7.5138E+01
M	-8.6325E+00	-1.6553E+01	-2.0229E+01
A	1.4377E+01	2.0740E+01	2.3677E+01
S	2.9147E+00	3.1255E+00	3.2436E+00
Z	3.4514E+00	4.1073E+00	4.4224E+00
GAME	9.6013E-01	9.8335E-01	1.0112E+00
U	4.4334E+01	8.6100E+00	9.0622E+00

SPECIES	MOLE FRACTIONS		
E-	1.3222E-01	2.7014E-01	3.2196E-01
O	5.2558E-01	3.0859E-01	2.3267E-01
O+	5.1613E-02	1.7630E-01	2.1763E-01
O++	2.9064E-08	1.1486E-04	7.8429E-04
O-	8.3371E-04	1.2868E-03	8.1056E-04
O2	1.4655E-04	6.3616E-05	2.3868E-05
O2+	6.9753E-05	1.4961E-04	9.9452E-05
O2-	6.3675E-07	1.0448E-06	4.0508E-07
C	2.0689E-01	1.4844E-01	1.2395E-01
C+	8.1339E-02	9.3949E-02	1.0006E-01
C++	3.4891E-06	4.7258E-04	1.7550E-03
C-	2.2867E-04	2.5616E-04	1.5579E-04
CO	7.6151E-04	1.0900E-04	3.5922E-05
CO+	2.5182E-04	1.1864E-04	5.8499E-05
CO2	3.6981E-08	2.3493E-09	3.9305E-10
C2	6.6465E-05	8.8293E-06	2.6881E-06

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1= 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9610E+03	3.0645E+04	4.4695E+04
T	6.5762E+01	1.1254E+02	1.3350E+02
RHD	1.2659E+01	6.4103E+01	7.3032E+01
H	-9.3866E+00	-1.7904E+01	-2.1964E+01
A	1.4961E+01	2.1807E+01	2.4953E+01
S	2.9699E+00	3.1838E+00	3.3058E+00
Z	3.5568E+00	4.2479E+00	4.5843E+00
GAME	9.5697E-01	9.9475E-01	1.0174E+00
U	4.6008E+01	9.0964E+00	9.6354E+00

SPECIES	MOLE FRACTIONS		
E-	1.5760E-01	2.9420E-01	3.4584E-01
O	4.9292E-01	2.7373E-01	2.0056E-01
O+	6.7480E-02	1.9532E-01	2.3327E-01
O++	1.0122E-07	2.4396E-04	1.6052E-03
O-	8.2494E-04	1.0405E-03	6.0312E-04
O2	1.1377E-04	4.1205E-05	1.3821E-05
O2+	7.2438E-05	1.2360E-04	7.4598E-05
O2-	5.3348E-07	6.5914E-07	2.2243E-07
C	1.8916E-01	1.3632E-01	1.1087E-01
C+	9.0860E-02	9.7821E-02	1.0403E-01
C++	7.6714E-06	8.0050E-04	2.9678E-03
C-	2.1376E-04	2.0348E-04	1.1580E-04
CO	4.8813E-04	6.6916E-05	2.0194E-05
CO+	2.1382E-04	8.7680E-05	3.9999E-05
CO2	1.8395E-08	1.0480E-09	1.5357E-10
C2	4.3373E-05	5.2593E-06	1.4772E-06

P1 = 1.00E+04 N/SQ-M. US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1825E+03	3.2587E+04	4.7911E+04
T	6.9021E+01	1.1888E+02	1.4185E+02
RHD	1.2579E+01	6.2433E+01	7.1203E+01
H	-1.0169E+01	-1.9304E+01	-2.3773E+01
A	1.5550E+01	2.2908E+01	2.6172E+01
S	3.0242E+00	3.2407E+00	3.3663E+00
Z	3.6657E+00	4.3905E+00	4.7435E+00
GAME	9.5567E-01	1.0054E+00	1.0180E+00
U	4.7685E+01	9.6181E+00	1.0220E+01

SPECIES	MOLE FRACTIONS		
E-	1.8242E-01	3.1704E-01	3.6776E-01
O	4.5957E-01	2.4118E-01	1.7268E-01
O+	8.4393E-02	2.1267E-01	2.4529E-01
O++	2.9800E-07	4.9413E-04	3.0469E-03
O-	7.9898E-04	8.2311E-04	4.4638E-04
O2	8.8744E-05	2.6109E-05	8.0226E-06
O2+	7.3268E-05	9.9414E-05	5.5123E-05
O2-	4.4168E-07	4.0267E-07	1.2207E-07
C	1.7316E-01	1.2452E-01	9.8548E-02
C+	9.8740E-02	1.0155E-01	1.0727E-01
C++	1.5146E-05	1.3243E-03	7.728E-03
C-	1.9638E-04	1.5935E-04	8.5962E-05
CO	3.2400E-04	4.0673E-05	1.1471E-05
CO+	1.8072E-04	6.3923E-05	2.7268E-05
CO2	9.6118E-09	4.6139E-10	6.1516E-11
C2	2.8846E-05	3.1174E-06	8.2288E-07

P1 = 1.00E+04 N/SQ-M. US1= 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4122E+03	3.4576E+04	5.1252E+04
T	7.2203E+01	1.2551E+02	1.5012E+02
RHD	1.2509E+01	6.0758E+01	6.9726E+01
H	-1.0981E+01	-2.0752E+01	-2.5648E+01
A	1.6148E+01	2.4017E+01	2.7303E+01
S	3.0780E+00	3.2964E+00	3.4244E+00
Z	3.7779E+00	4.5341E+00	4.8964E+00
GAME	9.5589E-01	1.0136E+00	1.0141E+00
U	4.9365E+01	1.0177E+01	1.0794E+01

SPECIES	MOLE FRACTIONS		
E-	2.0656E-01	3.3860E-01	3.8747E-01
O	4.2598E-01	2.1129E-01	1.4933E-01
O+	1.0200E-01	2.2796E-01	2.5339E-01
O++	7.7440E-07	9.5542E-04	5.2917E-03
O-	7.5947E-04	6.3910E-04	3.3379E-04
O2	6.9146E-05	1.6240E-05	4.7752E-06
O2+	7.2376E-05	7.8114E-05	4.0716E-05
O2-	3.6045E-07	2.3973E-07	6.8858E-08
C	1.5874E-01	1.1303E-01	8.7406E-02
C+	1.0522E-01	1.0510E-01	1.0944E-01
C++	2.7655E-05	2.1372E-03	7.1988E-03
C-	1.7787E-04	1.2324E-04	6.4577E-05
CO	2.1994E-04	2.4510E-05	6.7198E-06
CO+	1.5187E-04	4.6021E-05	1.8791E-05
CO2	5.1808E-09	2.0106E-10	2.6110E-11
C2	1.9433E-05	1.8396E-06	4.7371E-07

P1 = 1.00E+04 N/SQ-M. US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6498E+03	3.6608E+04	5.4672E+04
T	7.5349E+01	1.3230E+02	1.5836E+02
RHD	1.2442E+01	5.9186E+01	6.8390E+01
H	-1.1820E+01	-2.2247E+01	-2.7580E+01
A	1.6759E+01	2.5093E+01	2.8389E+01
S	3.1312E+00	3.3505E+00	3.4823E+00
Z	3.8932E+00	4.6751E+00	5.0481E+00
GAME	9.5744E-01	1.0180E+00	1.0081E+00
U	5.1043E+01	1.0745E+01	1.1343E+01

SPECIES	MOLE FRACTIONS		
E-	2.2995E-01	3.5852E-01	4.0586E-01
O	3.9249E-01	1.8474E-01	1.2933E-01
O+	1.1999E-01	2.4063E-01	2.5797E-01
O++	1.8304E-06	1.7666E-03	8.5509E-03
O-	7.0953E-04	4.9174E-04	2.5146E-04
O2	5.3573E-05	1.0059E-05	2.8895E-06
O2+	6.9950E-05	6.0433E-05	2.9949E-05
O2-	2.8930E-07	1.4133E-07	3.9578E-08
C	1.4570E-01	1.0210E-01	7.7190E-02
C+	1.1054E-01	1.0823E-01	1.1046E-01
C++	4.7666E-05	3.3306E-03	1.0292E-02
C-	1.5914E-04	9.4861E-05	4.8896E-05
CO	1.5131E-04	1.4823E-05	4.0156E-06
CO+	1.2677E-04	3.2976E-05	1.3000E-05
CO2	2.8426E-09	8.8559E-11	1.1489E-11
C2	1.3195E-05	1.0929E-06	2.7850E-07

TABLE I.- Continued

$$p_1 = 10 \text{ kN/m}^2$$

P1 = 1.00E+04 N/SQ-M. US1 = 1.55E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8952E+03	3.8668E+04	5.8138E+04
T	7.8493E+01	1.3920E+02	1.6625E+02
RHO	1.2371E+01	5.7707E+01	6.7329E+01
H	-1.2688E+01	-2.3790E+01	-2.9566E+01
A	1.7388E+01	2.6119E+01	2.9421E+01
S	3.1838E+00	3.4033E+00	3.5382E+00
Z	4.0113E+00	4.8136E+00	5.1941E+00
GAME	9.6021E-01	1.0181E+00	1.0024E+00
U	5.2718E+01	1.1316E+01	1.1866E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.5256E-01	3.7694E-01	4.2254E-01
O	3.5941E-01	1.6143E-01	1.1277E-01
O+	1.3809E-01	2.5053E-01	2.5928E-01
O++	4.0218E-06	3.0192E-03	1.2756E-02
O-	6.5189E-04	3.7692E-04	1.9335E-04
O2	4.1121E-05	6.2412E-06	1.8136E-06
O2+-3E	6.6217E-05	4.6247E-05	2.2254E-05
O2+-1E	2.2782E-07	8.3242E-08	2.3747E-08
SE-	1.3382E-01	9.1786E-02	6.8286E-02
C+-7E5E0	1.1492E-01	1.1076E-01	1.1026E-01
C+-1E5E0	7.8713E-05	4.9987E-03	1.3847E-02
C+-3E8	1.4076E-04	7.2909E-05	3.7786E-05
CO-	1.0480E-04	9.0298E-06	2.4962E-06
CO+	1.0500E-04	2.3572E-05	9.1642E-06
CO2	1.5715E-09	3.9689E-11	5.4452E-12
C2	8.9947E-06	6.5529E-07	1.7059E-07

P1 = 1.00E+04 N/SQ-M. US1 = 1.60E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1482E+03	4.0774E+04	6.1650E+04
T	8.1641E+01	1.4622E+02	1.7383E+02
RHO	1.2301E+01	5.6320E+01	6.6456E+01
H	-1.3584E+01	-2.5381E+01	-3.1598E+01
A	1.8031E+01	2.7104E+01	3.0428E+01
S	3.2354E+00	3.4561E+00	3.5927E+00
Z	4.1307E+00	4.9513E+00	5.3368E+00
GAME	9.6408E-01	1.0147E+00	9.9804E-01
U	5.4389E+01	1.1879E+01	1.2351E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.7410E-01	3.9424E-01	4.3797E-01
O	3.2735E-01	1.4095E-01	9.8790E-02
O+	1.5589E-01	2.5764E-01	2.5793E-01
O++	8.2919E-06	4.9589E-03	1.7846E-02
O-	5.8998E-04	2.8850E-04	1.5119E-04
O2	3.1281E-05	3.8839E-06	1.1719E-06
O2+	6.1508E-05	3.5054E-05	1.6663E-05
O2-	1.7629E-07	4.9130E-08	1.4751E-08
C	1.2305E-01	8.2056E-02	6.0493E-02
C+	1.1851E-01	1.1251E-01	1.0902E-01
C++	1.2535E-04	7.2337E-03	1.7742E-02
C-	1.2332E-04	5.6007E-05	2.9703E-05
CO	7.2974E-05	5.5358E-06	1.6014E-06
CO+	8.6421E-05	1.6794E-05	6.5560E-06
CO2	8.7436E-10	1.8078E-11	2.7253E-12
C2	6.1601E-06	3.9567E-07	1.0801E-07

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 1.00E+03 \text{ M/SEC}$
 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7599E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0829E+00	1.0974E+00	1.1187E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2159E+02	1.9027E+02
T	3.1957E+00	4.5033E+00	5.2613E+00
RHO	7.1505E+00	2.7027E+01	3.4159E+01
H	9.1903E-01	8.4219E-01	8.2786E-01
A	1.7137E+00	2.0229E+00	2.1821E+00
S	1.1184E+00	1.1409E+00	1.1641E+00
Z	1.0000E+00	1.0000E+00	1.0001E+00
GAME	9.1904E-01	9.0874E-01	9.0694E-01
U	3.8201E+00	1.0100E+00	9.7940E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.6040E-53	2.2685E-43	7.9614E-35
O	5.1498E-15	3.2925E-12	1.9112E-10
O+	3.1773E-38	2.1142E-34	1.4851E-31
O++	0.	0.	0.
O-	1.4789E-58	4.4964E-48	9.1699E-39
O2	4.3992E-04	4.3992E-04	4.4008E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9638E-42	3.6833E-34
C	3.7314E-54	3.2772E-45	2.2986E-37
C+	2.0585E-64	4.6742E-56	1.2606E-48
C++	0.	0.	0.
C-	5.3639E-99	4.8585E-82	2.2664E-64
CO	3.6131E-12	3.4783E-09	3.2611E-07
CO+	5.2706E-37	1.1588E-32	2.5292E-29
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	2.2886E-78	1.9889E-65	1.5675E-53

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E	6.1747E-43	2.1588E-27	1.1741E-22
O	4.7672E-13	1.3102E-09	4.7479E-08
O+	1.0925E-34	5.0718E-20	7.3523E-28
O++	0.	0.	0.
O-	7.8611E-48	9.5505E-31	1.2114E-26
O2	4.3992E-04	4.4112E-04	4.9662E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	3.9088E-42	1.6778E-27	7.2437E-24
C	8.2412E-45	2.4860E-30	5.6021E-27
C+	1.0790E-55	2.7802E-42	3.2248E-39
C++	0.	5.7655E-99	1.7960E-92
C-	3.9206E-81	2.3071E-52	7.3888E-46
CO	8.3221E-10	2.4177E-06	1.1311E-04
CO+	7.2310E-33	4.2085E-27	4.3878E-25
CO2	9.9956E-01	9.9956E-01	9.9939E-01
C2	8.9436E-65	3.2472E-43	2.0068E-38

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 1.40E+03 \text{ M/SEC}$
 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9415E+02	2.9180E+02
T	3.8892E+00	5.6915E+00	6.5781E+00
RHO	8.0418E+00	3.4106E+01	4.4289E+01
H	8.8932E-01	8.0790E-01	7.6487E-01
A	1.8839E+00	2.2663E+00	2.4285E+00
S	1.1542E+00	1.1839E+00	1.2084E+00
Z	1.0000E+00	1.0002E+00	1.0016E+00
GAME	9.1255E-01	9.0224E-01	8.9514E-01
U	4.5382E+00	1.0726E+00	1.0052E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8619E+02	4.1414E+02
T	4.6619E+00	6.9578E+00	7.8652E+00
RHO	8.8002E+00	4.1009E+01	5.2420E+01
H	8.5508E-01	7.4502E-01	6.9322E-01
A	2.0573E+00	2.4935E+00	2.4457E+00
S	1.1854E+00	1.2256E+00	1.2412E+00
Z	1.0000E+00	1.0030E+00	1.0095E+00
GAME	9.0787E-01	8.9093E-01	8.8175E-01
U	5.2490E+00	1.1277E+00	1.0572E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.0478E-36	1.0854E-20	2.4530E-17
O	1.1323E-10	1.5766E-07	3.2559E-06
O+	4.7861E-32	5.2412E-27	4.8401E-24
O++	0.	0.	3.9840E-93
O-	3.5777E-40	3.1607E-23	1.8282E-19
O2	4.4000E-04	6.7144E-04	1.9951E-03
O2+	1.7597E-18	1.7436E-18	4.2747E-17
O2-	1.1718E-35	4.8175E-21	1.6279E-17
C	3.4120E-38	5.9757E-25	9.4663E-21
C+	1.5320E-49	5.5189E-38	2.5850E-32
C++	0.	9.6734E-87	2.7545E-76
C-	3.7950E-68	5.6976E-40	2.8773E-34
CO	1.7073E-07	4.6345E-04	3.1150E-03
CO+	6.4348E-30	3.3748E-24	1.4743E-21
CO2	9.9956E-01	9.9886E-01	9.9489E-01
C2	5.4747E-55	1.0549E-34	1.1038E-29

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E	5.8951E-25	1.7089E-16	1.4014E-14
O	6.0824E-09	9.7923E-05	7.5237E-05
O+	9.7563E-30	2.4509E-23	5.1730E-20
O++	0.	6.3955E-88	9.9190E-80
O-	1.9055E-29	1.4250E-18	4.6842E-14
O2	4.4491E-04	3.4347E-03	9.6201E-03
O2+	1.7597E-18	2.8923E-16	3.0043E-14
O2-	1.2732E-26	1.1697E-16	1.5566E-14
C	4.6353E-29	6.0469E-20	4.9820E-17
C+	3.9117E-41	9.9232E-31	5.6535E-27
C++	0.	5.7218E-77	3.6521E-65
C-	4.9252E-40	1.6382E-32	1.2048E-29
CO	1.4002E-05	6.0119E-23	1.8444E-02
CO+	1.0436E-27	1.1765E-20	7.1921E-19
CO2	9.9956E-01	9.9055E-01	9.7186E-01
C2	1.7769E-41	1.0105E-28	1.1967E-24

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 1.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2100E+01	3.9947E+02	5.6741E+02
T	5.5052E+00	8.1627E+00	9.0026E+00
RHO	9.4542E+00	4.8789E+01	4.0901E+01
M	8.1626E-01	6.7338E-01	6.1313E-01
A	2.2301E+00	2.6546E+00	2.8419E+00
S	1.2236E+00	1.2666E+00	1.2032E+00
Z	1.0002E+00	1.0174E+00	1.0277E+00
GAME	9.0257E-01	8.7837E-01	8.7300E-01
U	5.9560E+00	1.1481E+00	1.0930E+00

SPECIES	MOLE FRACTIONS		
E-	1.8326E-21	4.6455E-14	8.2679E-13
O	2.2431E-07	1.4574E-04	5.5886E-04
O+	4.5328E-27	1.9662E-16	2.3242E-17
O++	0.	2.5231E-74	2.8468E-69
O-	1.4404E-24	1.7848E-15	7.6201E-14
O2	6.7611E-04	1.3491E-02	2.6762E-02
O2+	1.7614E-18	1.0038E-12	2.2577E-12
O2-	3.2176E-22	5.2170E-14	1.3444E-12
C	3.4830E-25	1.9842E-16	1.3698E-14
C+	1.1794E-37	3.2547E-26	1.5333E-23
C++	8.4486E-90	7.4407E-41	6.1692E-56
C-	8.6384E-43	1.2209E-27	4.4971E-25
CO	4.7281E-04	2.6259E-02	5.3227E-02
CO+	2.3833E-24	2.8278E-17	1.7623E-15
CO2	9.9885E-01	9.6010E-01	9.1945E-01
C2	3.0675E-36	1.4563E-25	2.1726E-21

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 2.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8398E+01	7.0703E+02	9.4927E+02
T	7.2542E+00	1.0197E+01	1.0950E+01
RHO	1.0729E+01	6.5097E+01	7.9185E+01
M	7.2484E-01	5.0285E-01	4.2514E-01
A	2.5386E+00	3.0741E+00	3.2224E+00
S	1.2892E+00	1.3497E+00	1.3787E+00
Z	1.0074E+00	1.0652E+00	1.0947E+00
GAME	8.8190E-01	8.7003E-01	8.7158E-01
U	7.3822E+00	1.2189E+00	1.1762E+00

SPECIES	MOLE FRACTIONS		
E-	2.2412E-15	2.4645E-11	1.2583E-10
O	5.1180E-05	2.8198E-03	5.7304E-03
O+	1.2433E-22	4.1334E-15	6.1340E-14
O++	1.9110E-82	8.2058E-60	5.6170E-57
O-	1.5401E-17	4.9847E-12	4.0665E-11
O2	7.6902E-03	5.8790E-02	8.1197E-02
O2+	2.9154E-15	7.8329E-11	4.6284E-10
O2-	6.5718E-16	4.8874E-11	2.9823E-10
C	9.5726E-19	1.4849E-12	1.6357E-11
C+	1.8857E-28	1.8321E-20	1.0706E-18
C++	2.1971E-67	5.2793E-49	1.7419E-46
C-	2.0442E-30	7.5000E-22	5.6667E-20
CO	1.4558E-02	1.1957E-01	1.6732E-01
CO+	1.6762E-19	1.7081E-13	1.8190E-12
CO2	9.7770E-01	8.1882E-01	7.4577E-01
C2	1.4563E-26	1.4168E-18	5.1630E-17

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 2.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4535E+01	5.3753E+02	7.3790E+02
T	6.3962E+00	9.2320E+00	1.0010E+01
RHO	1.0071E+01	5.6293E+01	6.9774E+01
M	7.7287E-01	5.9276E-01	5.2408E-01
A	2.3929E+00	2.8847E+00	3.0739E+00
S	1.2568E+00	1.3075E+00	1.3559E+00
Z	1.0019E+00	1.0343E+00	1.0565E+00
GAME	8.9353E-01	8.7148E-01	8.7034E-01
U	6.6659E+00	1.1946E+00	1.1231E+00

SPECIES	MOLE FRACTIONS		
E-	1.6483E-17	1.9579E-12	1.4508E-11
O	4.6672E-06	8.4187E-04	7.1456E-03
O+	9.7499E-25	9.3453E-17	1.9799E-15
O++	1.3892E-95	1.8082E-67	1.1774E-60
O-	4.0506E-20	2.1551E-13	2.7332E-12
O2	2.3223E-03	3.2707E-02	5.1747E-02
O2+	2.1929E-17	5.2799E-12	4.6796E-11
O2-	3.4496E-18	3.1122E-12	2.9647E-11
C	1.7840E-21	4.5892E-14	7.5821E-13
C+	1.5206E-33	1.5173E-22	7.4574E-21
C++	3.4619E-78	4.0330E-55	9.0077E-50
C-	1.0403E-35	5.2824E-24	3.0501E-22
CO	3.7711E-03	6.5495E-02	1.0481E-01
CO+	3.6563E-22	5.4177E-15	8.9811E-14
CO2	9.9390E-01	9.0105E-01	8.4130E-01
C2	1.5661E-31	1.4138E-20	6.1794E-19

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 2.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3711E+01	9.1394E+02	1.2065E+03
T	8.0276E+00	1.1107E+01	1.1869E+01
RHO	1.1460E+01	7.4499E+01	8.9068E+01
M	6.7219E-01	4.0357E-01	3.1581E-01
A	2.6710E+00	3.2708E+00	3.4433E+00
S	1.3213E+00	1.3912E+00	1.4228E+00
Z	1.0186E+00	1.1047E+00	1.1413E+00
GAME	8.7247E-01	8.7190E-01	8.7528E-01
U	8.1059E+00	1.2493E+00	1.1965E+00

SPECIES	MOLE FRACTIONS		
E-	9.2121E-14	1.8012E-10	7.1422E-10
O	2.8520E-04	6.9501E-03	1.2354E-02
O+	5.2154E-19	9.1971E-14	9.2946E-13
O++	4.2363E-77	4.0547E-54	7.6866E-52
O-	2.1482E-15	5.5544E-11	3.4528E-10
O2	1.8436E-02	8.8227E-02	1.1181E-01
O2+	1.3272E-13	6.5016E-10	2.8847E-09
O2-	3.7989E-14	4.1327E-10	1.8458E-09
C	3.4590E-16	2.4483E-11	1.8901E-10
C+	8.4283E-26	1.1695E-18	4.6021E-17
C++	7.0338E-63	2.7410E-46	1.1450E-43
C-	1.0527E-27	5.7439E-20	2.7070E-18
CO	3.4293E-02	1.8261E-01	2.3519E-01
CO+	3.9245E-17	2.6857E-12	2.0064E-11
CO2	9.4499E-01	7.2221E-01	6.4065E-01
C2	7.1080E-24	6.9810E-17	1.5889E-15

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

P1 = 2.00E+04 N/SQ-M, US1 = 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1047E+02	1.1413E+02	1.5144E+03
T	8.7106E+00	1.1999E+01	1.2820E+01
RHO	1.2241E+01	8.4042E+01	9.8980E+01
H	6.1491E-01	2.9022E-01	1.9587E-01
A	2.7974E+00	3.4790E+00	3.4708E+00
S	1.3535E+00	1.4341E+00	1.4677E+00
Z	1.0360E+00	1.1517E+00	1.1957E+00
GAME	8.6712E-01	8.7590E-01	8.8074E-01
U	8.8346E+00	1.2850E+00	1.2465E+00

SPECIES	MOLE FRACTIONS		
E-	1.1891E-12	9.7377E-10	3.1575E-09
O	9.7517E-04	1.4199E-02	2.3246E-02
O+	2.3415E-17	1.2922E-12	9.5106E-12
O++	1.5703E-71	2.7066E-60	2.4253E-48
O-	5.1476E-14	4.712E-10	2.0998E-09
O2	3.4230E-02	1.1787E-01	1.4049E-01
O2+	1.831E-12	3.6777E-09	1.3518E-08
O2-	5.9972E-13	2.3150E-09	8.4253E-09
C	1.1372E-14	2.5791E-10	1.5329E-09
C+	1.4170E-23	6.2197E-17	1.1587E-15
C++	2.8902E-58	2.5068E-41	2.0013E-39
C-	2.3833E-25	3.6274E-18	7.4146E-17
CO	6.8587E-02	2.4918E-01	3.0349E-01
CO+	1.1527E-15	7.6905E-11	1.5542E-10
CO2	8.9621E-01	6.1875E-01	5.3277E-01
C2	8.3539E-22	2.1847E-15	2.9729E-14

P1 = 2.00E+04 N/SQ-M, US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4819E+02	1.7740E+02	2.2829E+03
T	9.8910E+00	1.3824E+01	1.4799E+01
RHO	1.3786E+01	1.0149E+02	1.1559E+02
H	4.8658E-01	5.0929E-02	7.4594E-02
A	3.0492E+00	3.9403E+00	4.1887E+00
S	1.4196E+00	1.5218E+00	1.5600E+00
Z	1.0868E+00	1.2442E+00	1.3231E+00
GAME	8.6497E-01	8.8827E-01	8.9510E-01
U	1.0297E+01	1.4007E+00	1.3827E+00

SPECIES	MOLE FRACTIONS		
E-	3.9427E-11	1.3393E-08	2.9878E-08
O	5.0985E-03	4.2524E-02	6.2790E-02
O+	4.3709E-15	8.5821E-11	4.8989E-10
O++	2.9963E-61	6.2286E-45	8.4128E-42
O-	2.9071E-12	1.1270E-08	4.1596E-08
O2	7.5148E-02	1.6689E-01	1.8074E-01
O2+	4.8623E-11	5.6572E-08	1.7250E-07
O2-	2.5404E-11	3.3030E-08	9.6412E-08
C	1.3694E-12	1.1156E-08	5.2815E-08
C+	1.4144E-20	2.2894E-14	2.8456E-13
C++	4.4544E-50	1.4437E-34	5.2102E-34
C-	3.3631E-22	1.5848E-15	1.9637E-14
CO	1.5462E-01	3.7562E-01	4.2460E-01
CO+	1.2103E-13	1.0542E-09	4.8953E-09
CO2	7.6511E-01	4.1495E-01	3.3087E-01
C2	5.4572E-19	4.4948E-13	4.2351E-12

P1 = 2.00E+04 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2864E+02	1.4488E+03	1.8737E+03
T	9.3240E+00	1.2897E+01	1.3768E+01
RHO	1.3028E+01	9.3212E+01	1.0834E+02
H	5.5304E-01	1.7740E-01	6.5149E-02
A	2.9225E+00	3.7014E+00	3.9181E+00
S	1.3862E+00	1.4777E+00	1.5125E+00
Z	1.0590E+00	1.2051E+00	1.2560E+00
GAME	8.6501E-01	8.8144E-01	8.8774E-01
U	9.5652E+00	1.3392E+00	1.2074E+00

SPECIES	MOLE FRACTIONS		
E-	8.1328E-12	3.8200E-09	1.1790E-08
O	2.4569E-03	2.5654E-02	3.9840E-02
O+	3.8586E-16	1.2002E-11	7.3857E-11
O++	1.0185E-64	1.1348E-48	4.2948E-45
O-	4.5075E-13	2.5333E-09	1.7086E-08
O2	5.3666E-02	1.4492E-01	1.6436E-01
O2+	1.3420E-11	1.8509E-08	5.1752E-08
O2-	4.710E-12	9.4974E-09	2.0887E-08
C	1.5225E-12	1.9012E-09	9.4994E-09
C+	4.3203E-22	1.5005E-15	1.9571E-14
C++	6.4235E-53	9.8403E-40	1.0294E-38
C-	8.1368E-24	9.5040E-17	1.0208E-15
CO	1.0896E-01	2.1478E-01	3.6786E-01
CO+	1.4408E-14	1.8910E-10	9.2811E-10
CO2	8.3492E-01	5.1444E-01	4.2793E-01
C2	2.4194E-20	2.7424E-14	3.8446E-13

P1 = 2.00E+04 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6911E+02	2.1338E+03	2.7302E+03
T	1.0429E+01	1.4798E+01	1.5909E+01
RHO	1.4493E+01	1.0852E+02	1.2238E+02
H	4.1555E-01	8.4229E-02	2.7888E-01
A	3.1794E+00	4.1578E+00	4.4843E+00
S	1.4535E+00	1.5662E+00	1.6068E+00
Z	1.1185E+00	1.3284E+00	1.3955E+00
GAME	8.6630E-01	8.9628E-01	9.0578E-01
U	1.1023E+01	1.4744E+00	1.4682E+00

SPECIES	MOLE FRACTIONS		
E-	1.4844E-10	4.2160E-08	1.2410E-07
O	9.2880E-03	4.6109E-02	9.6441E-02
O+	3.4019E-14	5.1233E-10	2.8392E-09
O++	2.9437E-58	8.2514E-42	9.1837E-39
O-	2.0021E-11	4.2412E-08	1.4958E-07
O2	9.7276E-02	1.8157E-01	1.8727E-01
O2+	2.6923E-10	1.7502E-07	6.0887E-07
O2-	1.0133E-10	9.5746E-08	2.6050E-07
C	8.7119E-12	5.5965E-08	2.6537E-07
C+	2.6116E-19	2.9828E-13	2.4879E-12
C++	1.1574E-47	5.2032E-34	1.7213E-31
C-	7.1572E-21	2.0155E-14	2.3855E-13
CO	2.0325E-01	4.2858E-01	4.7038E-01
CO+	7.2707E-13	4.9877E-09	2.2474E-08
CO2	6.9008E-01	3.2375E-01	2.4589E-01
C2	7.4507E-18	4.2869E-12	3.9774E-11

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 3.40E+03 \text{ M/SEC}$
 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 3.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9138E+02	2.5242E+03	3.2405E+03
T	1.0950E+01	1.5875E+01	1.7121E+01
RHO	1.5133E+01	1.1408E+02	1.2850E+02
H	3.3994E-01	2.7794E-01	3.9236E-01
A	3.3143E+00	4.4758E+00	4.8082E+00
S	1.4881E+00	1.6106E+00	1.6736E+00
Z	1.1549E+00	1.3574E+00	1.4729E+00
GAME	8.6860E-01	9.0539E-01	9.1677E-01
U	1.1749E+01	1.5609E+00	1.5672E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1497E+02	2.9405E+03	2.7834E+03
T	1.1445E+01	1.6949E+01	1.9442E+01
RHO	1.5697E+01	1.1803E+02	1.3180E+02
H	2.5978E-01	2.8506E-01	3.4730E-01
A	3.4551E+00	4.7760E+00	5.1645E+00
S	1.5234E+00	1.5548E+00	1.7004E+00
Z	1.1946E+00	1.4700E+00	1.5548E+00
GAME	8.7164E-01	9.1556E-01	9.2914E-01
U	1.2472E+01	1.6611E+00	1.6819E+00

SPECIES	MOLE FRACTIONS		
E-	4.6790E-10	1.2239E-07	2.6238E-07
O	1.5448E-02	9.7465E-02	1.3973E-01
O+	2.0162E-12	2.6857E-06	1.4771E-08
O++	6.6146E-29E-55	5.8084E-39	6.2220E-34
O-	8.1310E-11	1.4133E-07	4.7892E-07
O2	1.1909E-01	1.8721E-01	1.8242E-01
O2+	8.7495E-10	4.8244E-07	1.3514E-05
O2++	3.2939E-10	2.4225E-07	4.1846E-07
O2-	4.3283E-11	2.5025E-07	1.2022E-04
O2++	3.1718E-18	3.1327E-12	2.7717E-11
O2++	1.6901E-45	1.2164E-21	4.6707E-29
O2++	9.5240E-20	2.0923E-12	2.4778E-12
O2	2.5286E-01	4.7127E-01	5.6340E-01
O2+	2.4482E-12	2.0840E-08	9.3407E-08
O2	6.1261E-01	2.7407E-01	1.7524E-01
O2	7.0704E-17	2.4552E-11	2.2192E-10

SPECIES	MOLE FRACTIONS		
E-	1.3002E-09	2.2297E-07	1.0078E-06
O	2.4045E-02	1.2709E-01	1.9029E-01
O+	9.8744E-12	1.2408E-08	6.5744E-08
O++	4.1440E-53	1.8177E-36	2.8627E-33
O-	2.7523E-10	4.1877E-07	1.3874E-06
O2	1.3921E-01	1.8292E-01	1.6683E-01
O2+	2.4807E-09	1.2022E-04	2.2775E-04
O2-	9.1602E-10	5.4194E-07	1.2987E-06
O2	1.8073E-10	1.0273E-04	3.1477E-04
O2	2.9144E-17	2.8827E-11	3.7599E-10
O2++	1.5222E-43	1.7128E-29	7.3829E-27
O2	9.3438E-19	1.8517E-12	2.7963E-11
O2	3.0173E-01	5.0223E-01	5.2338E-01
O2+	1.3735E-11	7.8971E-08	3.6245E-07
O2	5.2501E-01	1.7747E-01	1.9494E-01
O2	5.1665E-16	2.4524E-10	2.4401E-09

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 3.80E+03 \text{ M/SEC}$
 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 4.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3989E+02	3.2773E+02	4.3461E+03
T	1.1982E+01	1.8155E+01	1.9969E+01
RHO	1.6178E+01	1.2934E+02	1.3229E+02
H	1.7505E-01	5.4047E-01	7.5409E-01
A	3.6027E+00	5.1007E+00	5.5858E+00
S	1.5591E+00	1.6986E+00	1.7470E+00
Z	1.2376E+00	1.5458E+00	1.6404E+00
GAME	8.7532E-01	9.2679E-01	9.4322E-01
U	1.3191E+01	1.7755E+00	1.8221E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6612E+02	3.8285E+02	4.9821E+03
T	1.2508E+01	1.9774E+01	2.1699E+01
RHO	1.6573E+01	1.2107E+02	1.2297E+02
H	8.5759E-02	7.0932E-01	9.4484E-01
A	3.7581E+00	5.4490E+00	5.9523E+00
S	1.5953E+00	1.7417E+00	1.7888E+00
Z	1.2878E+00	1.4228E+00	1.7270E+00
GAME	8.7958E-01	9.3926E-01	9.5932E-01
U	1.3908E+01	1.9045E+00	1.9758E+00

SPECIES	MOLE FRACTIONS		
E-	3.2946E-06	8.5493E-07	2.7140E-06
O	3.5544E-02	1.8438E-01	2.4508E-01
O+	4.2177E-12	5.2796E-08	2.0760E-07
O++	7.0140E-51	9.7950E-34	1.4205E-06
O-	8.4755E-10	1.1208E-04	3.6512E-06
O2	1.5675E-01	1.6897E-01	1.4156E-01
O2+	6.3494E-09	2.7276E-06	7.1412E-06
O2-	2.2618E-06	1.0785E-06	2.4221E-04
O2	6.6574E-10	3.9531E-04	2.1481E-04
O2++	2.2255E-16	2.4615E-10	2.4276E-09
O2	8.3058E-42	2.8796E-27	1.4981E-24
O2	7.4023E-18	1.4701E-11	1.9974E-10
O2	3.4828E-01	5.2175E-01	6.3164E-01
O2+	4.8411E-11	2.7743E-07	1.3351E-06
O2	4.5928E-01	1.2489E-01	7.7667E-02
O2	3.1599E-15	1.6088E-09	1.8027E-08

SPECIES	MOLE FRACTIONS		
E-	7.7855E-06	2.1193E-06	7.2199E-06
O	5.0648E-02	2.7509E-01	3.1092E-01
O+	1.6749E-11	2.0602E-07	1.2626E-06
O++	7.0278E-49	2.4824E-31	5.8532E-28
O-	2.3213E-06	2.7325E-04	8.9223E-06
O2	1.7075E-01	1.4693E-01	1.1026E-01
O2+	1.5012E-08	5.4493E-06	1.4142E-05
O2-	5.0736E-06	1.0199E-06	4.0332E-04
O2	2.2238E-09	1.4520E-05	8.5476E-05
O2++	1.4877E-16	1.9420E-09	3.4357E-09
O2	1.9719E-40	3.2444E-25	2.4128E-22
O2	5.0064E-17	1.0510E-10	1.6729E-09
O2	3.9146E-01	5.2081E-01	5.7081E-01
O2+	1.5549E-10	9.1423E-07	4.7372E-06
O2	3.8714E-01	8.4727E-02	4.7870E-02
O2	1.6964E-14	9.8864E-09	1.2889E-07

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 4.20E+03 \text{ M/SFR}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9344E+02	4.2877E+03	5.6284E+03
T	1.3744E+01	2.3538E+01	2.3753E+01
RHD	1.6982E+01	1.2027E+02	1.3086E+02
M	-8.0848E-03	-8.8557E-01	-1.3682E+00
A	3.9221E+00	5.8795E+00	5.4870E+00
S	1.4319E+00	1.7840E+00	1.8778E+00
Z	1.3330E+00	1.7026E+00	1.8100E+00
GAME	8.8439E-01	9.6277E-01	9.7482E-01
U	1.462CF+01	2.0550E+00	2.1642E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.7447E-08	5.0089E-04	1.0954E-07
O	4.9761E-02	2.9347E-01	2.7047E-01
O+	5.8111E-11	7.4795E-07	4.9666E-06
O++	2.9174E-07	5.4318E-06	2.1358E-05
N-	5.8852E-09	4.1674E-01	2.0957E-05
N2	1.8036E-01	1.1943E-01	7.7281E-02
N2+	3.3702E-08	1.0690E-05	2.5077E-05
N2-	1.0453E-08	2.7797E-06	4.1288E-06
C	6.9954E-09	5.2338E-05	2.0440E-04
C+	9.0729E-15	1.4695E-08	3.6238E-07
C++	1.0482E-38	2.3014E-23	4.2416E-20
F-	3.0022E-16	7.0879E-10	1.4940E-08
CO	4.2982E-01	5.2175E-01	5.2402E-01
CO+	4.6500E-10	2.8788E-04	1.6674E-05
CO2	3.2905E-03	5.7266E-02	2.7544E-02
C2	8.2522E-14	5.5465E-08	1.0954E-06

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 4.40E+03 \text{ M/SFR}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5250E+02	5.2001E+03	6.9848E+03
T	1.4199E+01	2.4544E+01	2.9047E+01
RHD	1.7244E+01	1.1444E+02	1.2375E+02
M	2.0942E-01	1.2615E+00	1.6342E+00
A	4.2787E+00	6.6857E+00	7.4044E+00
S	1.7058E+00	1.8648E+00	1.9227E+00
Z	1.4397E+00	1.9490E+00	1.9437E+00
GAME	8.9595E-01	9.8365E-01	9.7177E-01
U	1.4034E+01	2.4193E+00	2.5070E+00

SPECIES ----- MOLE FRACTIONS -----

E	7.7351E-08	3.1051E-05	1.7455E-04
O	1.2197E-01	3.9792E-01	4.5949E-01
O+	6.2678E-10	8.3402E-04	5.9544E-03
O++	4.4105E-07	1.7734E-24	1.1088E-20
N	3.1105E-08	2.7418E-07	1.0734E-04
N2	1.8777E-01	6.1444E-02	2.9749E-02
N2+	1.4058E-07	2.8684E-05	4.0847E-05
N2-	3.6711E-08	4.1792E-04	1.1500E-03
C	5.9347E-08	7.3640E-06	7.8646E-03
C+	2.7254E-12	8.8052E-07	2.8406E-05
C++	9.9159E-35	3.0330E-19	7.2522E-16
C-	8.2687E-15	2.4403E-08	1.3016E-06
CO	4.8885E-01	5.1533E-01	4.9810E-01
CO+	3.6030E-09	2.4748E-07	1.6395E-04
CO2	2.0545E-01	2.3231E-02	7.4982E-03
C2	1.5912E-12	2.5008E-04	7.9678E-05

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 4.40E+03 \text{ M/SFR}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2243E+02	4.7472E+03	6.2011E+03
T	1.3611E+01	2.2504E+01	2.4247E+01
RHD	1.7107E+01	1.1801E+02	1.2728E+02
M	-1.0648E-01	-1.0458E+00	-1.2657E+00
A	4.0954E+00	6.2439E+00	6.9918E+00
S	1.6698E+00	1.8221E+00	1.8814E+00
Z	1.3809E+00	1.7754E+00	1.8867E+00
GAME	8.8973E-01	9.6884E-01	9.8747E-01
U	1.5329E+01	2.2747E+00	2.3772E+00

SPECIES ----- MOLE FRACTIONS -----

E-	7.7424E-08	1.2317E-05	5.9650E-05
O	9.3417E-02	3.4847E-01	4.2117E-01
O+	1.9555E-10	2.5636E-06	1.7989E-05
O++	2.8910E-04	9.4112E-27	4.8637E-23
N-	1.3964E-08	1.3160E-05	4.8862E-05
N2	1.8485E-01	8.0750E-02	4.8313E-02
N2+	7.0040E-08	1.8472E-05	3.8540E-05
N2-	2.0189E-08	4.5085E-06	8.4438E-06
C	2.0759E-08	1.0134E-04	1.8685E-03
C+	4.2876E-14	1.1156E-07	3.7411E-06
C++	1.5134E-36	2.9483E-21	7.7477E-19
C-	1.6387E-15	4.7579E-09	1.4892E-07
CO	4.6251E-01	5.2715E-01	5.1365E-01
CO+	1.3251E-09	8.8428E-06	5.7234E-05
CO2	2.5921E-01	3.4282E-02	1.4754E-02
C2	3.7283E-13	3.6847E-07	1.0106E-05

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 4.80E+03 \text{ M/SFR}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8281E+02	5.4422E+03	7.5559E+03
T	1.4818E+01	2.6847E+01	3.1470E+01
RHD	1.7704E+01	1.1013E+02	1.2198E+02
M	-3.1691E-01	-1.4636E+00	-1.8773E+00
A	4.4729E+00	7.1109E+00	7.7011E+00
S	1.7457E+00	1.9628E+00	1.9613E+00
Z	1.4968E+00	1.9080E+00	1.9064E+00
GAME	9.0200E-01	9.8645E-01	9.8495E-01
U	1.6735E+01	2.6778E+00	2.7467E+00

SPECIES ----- MOLE FRACTIONS -----

E	1.5490E-07	8.2183E-05	2.9831E-04
O	1.5521E-01	4.2655E-01	4.7804E-01
O+	1.9237E-05	2.4632E-05	1.0022E-04
O++	6.1131E-01	2.4268E-22	4.1240E-19
N-	6.5575E-08	5.6394E-05	1.6637E-04
N2	1.7691E-01	3.9231E-02	2.0200E-02
N2+	2.7027E-07	2.9140E-07	5.7464E-05
N2-	6.1188E-08	7.9709E-06	1.1295E-05
C	1.6597E-07	2.8513E-03	2.1177E-02
C+	1.3915E-12	4.4840E-06	1.0626E-04
C++	4.4555E-33	2.5641E-17	1.8728E-14
C-	3.8844E-14	2.7741E-07	6.2633E-04
CO	5.0855E-01	5.0919E-01	4.7339E-01
CO+	9.4626E-00	7.6249E-05	3.2981E-04
CO2	1.5923E-01	1.1434E-02	4.9871E-02
C2	6.4795E-12	1.7441E-05	3.3992E-04

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad US1 = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1615E+02	6.0794E+03	8.3025E+03
T	1.5474E+01	2.9219E+01	3.3378E+01
PHO	1.7288E+01	1.0633E+02	1.2149E+02
M	-4.2803E-01	-1.6776E+00	-2.1233E+00
A	4.6700E+00	7.4333E+00	7.9752E+00
S	1.7799E+00	1.9391E+00	1.9570E+00
Z	1.5564E+00	1.9568E+00	2.2475E+00
GAME	9.0904E-01	9.5640E-01	9.3070E-01
U	1.7431E+01	2.8387E+00	2.8907E+01

SPECIES	MOLE FRACTIONS		
E-	3.0109E-07	2.0449E-04	7.0710E-04
O	1.9324E-01	4.6355E-01	4.9577E-01
O+	5.6676E-09	5.9217E-05	1.7794E-04
O++	3.8109E-09	1.6577E-20	4.7491E-18
O-	1.3106E-07	1.0847E-04	3.0248E-04
O2	1.6452E-01	2.5209E-02	1.6140E-02
O2+	4.9905E-07	4.6951E-05	6.7904E-05
O2-	5.6728E-08	1.0070E-05	1.8774E-05
C	4.4108E-07	9.6005E-02	4.1097E-02
C+	6.7751E-12	3.7865E-05	2.9785E-04
C++	1.5061E-31	1.1763E-15	1.5244E-13
C-	1.7049E-13	1.5914E-04	1.8136E-05
CO	5.2171E-07	4.9407E-01	4.4104E-01
CO+	2.4143E-08	1.8074E-04	5.0679E-04
CO2	1.2052E-01	6.7164E-03	3.5494E-03
C2	2.5330E-11	9.0485E-05	8.2467E-04

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad US1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8504E+02	6.9611E+03	9.5733E+03
T	1.6934E+01	3.2978E+01	3.4276E+01
PHO	1.7047E+01	1.0299E+02	1.2080E+02
M	-4.6654E-01	-2.1672E+00	-2.4347E+00
A	5.1377E+00	7.9218E+00	8.7217E+00
S	1.8934E+00	2.0084E+00	2.0554E+00
Z	1.6807E+00	2.0514E+00	2.1656E+00
GAME	9.2584E-01	9.7997E-01	9.2601E-01
U	1.8809E+01	3.1204E+00	3.0865E+00

SPECIES	MOLE FRACTIONS		
E-	1.0718E-04	7.0580E-04	1.5744E-03
O	2.7894E-01	4.5755E-01	5.2577E-01
O+	4.6485E-08	1.7104E-04	2.5001E-04
O++	2.0035E-35	3.2189E-18	1.3216E-15
O-	4.4459E-07	2.4790E-04	5.4094E-04
O2	1.2629E-01	1.4745E-02	1.7405E-02
O2+	1.5277E-04	5.7146E-05	7.7940E-05
O2-	1.9921E-07	1.6675E-05	2.6407E-05
C	3.1712E-06	4.1298E-02	8.6745E-02
C+	1.6644E-10	2.9695E-04	9.0478E-04
C++	2.7821E-28	1.2471E-13	2.3824E-12
C-	3.0752E-12	1.6037E-05	6.6144E-05
CO	5.3102E-01	4.4079E-01	2.6679E-01
CO+	1.5326E-07	4.7962E-04	8.7355E-04
CO2	6.3720E-02	3.7260E-03	2.1163E-03
C2	3.9277E-10	7.7526E-04	2.2427E-03

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad US1 = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.5011E+02	4.5214E+03	8.9211E+03
T	1.6174E+01	3.1286E+01	3.4974E+01
PHO	1.7202E+01	1.0410E+02	1.2131E+02
M	-5.4548E-01	-1.8832E+00	-2.7767E+00
A	4.8981E+00	7.6854E+00	8.2570E+00
S	1.8148E+00	1.9740E+00	2.0340E+00
Z	1.6178E+00	2.0027E+00	2.1050E+00
GAME	9.1687E-01	9.4288E-01	9.2514E-01
U	1.8123E+01	2.9993E+00	3.0031E+00

SPECIES	MOLE FRACTIONS		
E-	5.7176E-07	4.1770E-04	1.0855E-03
O	2.3483E-01	4.8207E-01	5.1093E-01
O+	1.6286E-08	1.1005E-04	2.5798E-04
O++	2.0341E-20	3.5741E-10	2.9810E-17
O-	2.4933E-07	1.8151E-04	4.2147E-04
O2	1.4731E-01	1.8793E-02	1.3877E-02
O2+	8.8740E-07	5.2349E-05	7.0657E-05
O2-	1.4323E-07	1.2434E-05	2.5837E-05
C	1.1491E-04	2.3039E-02	6.2377E-02
C+	3.2810E-11	1.2941E-04	5.6206E-04
C++	4.8228E-30	1.8342E-14	7.1333E-13
C-	7.2330E-13	4.1044E-06	3.8041E-05
CO	5.2890E-01	4.7059E-01	4.0454E-01
CO+	6.0701E-08	3.7402E-04	6.7489E-04
CO2	8.8954E-02	4.4290E-03	2.6967E-03
C2	5.8157E-12	3.4299E-04	1.6025E-03

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad US1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2111E+02	7.3844E+03	1.0681E+04
T	1.7776E+01	3.4412E+01	3.7483E+01
PHO	1.6808E+01	1.0195E+02	1.1998E+02
M	-7.9210E-01	2.7392E+00	-2.9008E+00
A	5.3884E+00	8.1834E+00	8.8174E+00
S	1.8896E+00	2.0426E+00	2.1055E+00
Z	1.7441E+00	2.1040E+00	2.2799E+00
GAME	9.3657E-01	9.2454E-01	9.2531E-01
U	1.9489E+01	3.2184E+00	3.1749E+00

SPECIES	MOLE FRACTIONS		
E-	2.0021E-06	1.0557E-03	2.0379E-03
O	3.2414E-01	5.1202E-01	5.4010E-01
O+	1.3173E-07	2.4113E-04	4.4144E-04
O++	1.2511E-23	1.7727E-17	5.6782E-16
O-	8.0009E-07	3.6284E-04	6.8971E-04
O2	1.0274E-01	1.2695E-02	1.1327E-02
O2+	2.5394E-06	4.2194E-05	8.5916E-05
O2-	2.9995E-07	1.7601E-05	3.0207E-05
C	8.7526E-06	6.2080E-02	1.0973E-01
C+	8.6052E-10	5.3868E-04	1.3347E-03
C++	8.5304E-27	5.2471E-13	6.6766E-12
C-	1.3093E-11	3.2034E-05	1.0312E-04
CO	5.2911E-01	4.0444E-01	3.2845E-01
CO+	3.9119E-07	6.2667E-04	9.7897E-04
CO2	4.3994E-02	2.4811E-03	1.6748E-03
C2	1.6216E-09	1.3451E-03	2.9016E-03

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.824E+02	7.7738E+03	1.058E+04
T	1.8740E+01	3.4684E+01	3.8035E+01
RMD	1.5489E+01	1.0076E+02	1.1874E+02
M	-9.2212E-01	-2.5784E+00	-3.1751E+00
A	5.6711E+00	8.4397E+00	9.1110E+00
S	1.9227E+00	2.0769E+00	2.1417E+00
Z	1.8066E+00	2.1420E+00	2.2970E+00
GAME	9.4998E-01	0.2212E-01	9.2818E-01
U	2.0160E+01	3.2040E+00	3.7620E+00

SPECIES	MOLE FRACTIONS		
E-	3.8262E-06	1.4631E-03	2.4376E-03
O	7.6870E-01	5.2597E-01	5.3887E-01
O+	3.8184E-07	3.2194E-04	5.9535E-04
O++	9.4351E-32	7.2110E-17	1.5914E-15
O-	1.3807E-06	4.6737E-04	8.7957E-04
O2	7.8159E-02	1.1336E-02	1.0438E-02
O2+	4.0978E-06	6.7599E-05	9.4479E-05
O2+	3.1854E-07	2.0207E-05	3.3807E-05
C	2.5755E-04	8.3956E-02	1.2287E-01
C+	4.9359E-09	8.5242E-04	1.8590E-03
C++	3.9447E-25	1.6556E-12	1.6624E-11
C-	5.9716E-11	5.4489E-05	1.4878E-04
CO	5.2437E-01	7.7078E-01	2.0051E-01
CO+	1.0413E-06	7.6114E-04	1.1129E-03
CO2	2.8899E-02	1.9593E-02	1.2224E-02
C2	7.4287E-09	1.9829E-03	2.6824E-03

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3522E+02	8.2453E+03	1.1333E+04
T	2.1373E+01	3.7950E+01	4.1784E+01
RMD	1.5534E+01	9.6462E+01	1.1221E+02
M	-1.1954E+00	-3.0746E+00	-3.7447E+00
A	6.3558E+00	8.9623E+00	9.7254E+00
S	1.9935E+00	2.1467E+00	2.2155E+00
Z	1.9169E+00	2.2851E+00	2.4382E+00
GAME	9.8787E-01	9.2627E-01	9.3739E-01
U	2.1465E+01	3.4624E+00	3.4494E+00

SPECIES	MOLE FRACTIONS		
E-	1.7657E-05	2.4751E-03	4.1851E-03
O	4.4469E-01	5.5255E-01	5.7941E-01
O+	3.6824E-06	5.2673E-04	9.6117E-04
O++	1.7459E-27	7.2298E-14	1.7490E-14
O-	4.3438E-06	6.9052E-04	1.1633E-03
O2	3.3812E-02	9.4556E-02	8.8511E-02
O2+	5.3009E-04	7.9093E-05	1.1269E-04
O2+	4.1372E-07	2.4799E-05	3.9541E-05
C	3.3248E-04	1.2806E-01	1.7712E-01
C+	2.7948E-07	1.7042E-02	3.7521E-03
C++	2.8084E-21	1.0268E-11	8.3825E-11
C-	2.1033E-05	1.1788E-04	2.6428E-04
CO	5.1121E-01	2.9885E-01	7.1784E-01
CO+	9.1538E-04	0.9815E-04	1.2262E-03
CO2	9.9048E-03	1.2418E-03	7.9088E-04
C2	2.8591E-07	3.2198E-03	4.6868E-03

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9623E+02	8.1082E+03	1.1015E+04
T	1.9892E+01	3.6855E+01	4.0148E+01
RMD	1.6070E+01	9.6000E+01	1.1584E+02
M	-1.0544E+00	-2.8738E+00	-3.4578E+00
A	5.9913E+00	8.6590E+00	9.4144E+00
S	1.9600E+00	2.1114E+00	2.1785E+00
Z	1.8455E+00	2.2223E+00	2.3699E+00
GAME	9.4730E-01	9.2395E-01	9.3228E-01
U	2.0820E+01	3.7952E+00	3.7604E+00

SPECIES	MOLE FRACTIONS		
E-	7.7613E-06	1.9336E-03	3.3472E-03
O	4.0971E-01	5.3970E-01	5.6707E-01
O+	1.1581E-06	4.1614E-04	7.5478E-04
O++	1.1721E-29	2.4326E-14	4.8158E-14
O-	2.3955E-06	4.7689E-04	9.0895E-04
O2	5.4443E-02	1.0212E-02	9.6209E-02
O2+	6.3686E-06	7.3290E-05	1.0552E-04
O2+	3.7012E-07	2.7659E-05	3.7018E-05
C	8.5410E-04	1.0511E-01	1.5745E-01
C+	3.3669E-08	1.2394E-03	2.4447E-03
C++	2.9104E-23	6.7755E-12	1.2845E-11
C-	3.1623E-10	8.3272E-05	1.0707E-04
CO	5.1801E-01	3.7445E-01	2.5336E-01
CO+	2.9549E-04	8.8751E-04	1.2782E-03
CO2	1.7709E-02	1.5612E-03	1.0313E-02
C2	4.0824E-08	2.6271E-02	4.2445E-02

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7488E+02	8.5498E+03	1.1554E+04
T	2.3130E+01	3.9004E+01	4.2623E+01
RMD	1.4916E+01	9.3774E+01	1.1706E+02
M	-1.3387E+00	-3.3022E+00	-4.0774E+00
A	6.7218E+00	9.2376E+00	1.0048E+01
S	2.0255E+00	2.1827E+00	2.2570E+00
Z	1.9561E+00	2.3501E+00	2.5108E+00
GAME	9.9863E-01	9.2955E-01	9.4248E-01
U	2.2094E+01	3.5280E+00	3.5703E+00

SPECIES	MOLE FRACTIONS		
E-	4.6422E-05	3.1012E-03	5.1959E-03
O	4.7007E-01	5.4502E-01	5.9884E-01
O+	1.1584E-06	6.5707E-04	1.2137E-03
O++	3.5663E-25	1.9743E-15	3.7884E-14
O-	8.4683E-06	8.0748E-04	1.3734E-03
O2	1.8859E-02	8.6000E-02	8.0772E-02
O2+	1.2174E-05	8.1977E-05	1.2208E-04
O2+	4.6251E-07	2.6567E-05	4.1374E-05
C	1.4560E-03	1.4050E-01	1.5746E-01
C+	2.6722E-07	2.2558E-03	4.1478E-03
C++	3.7929E-19	2.2744E-11	1.7724E-10
C-	1.7955E-08	1.5788E-04	2.3723E-04
CO	5.0424E-01	2.6390E-01	1.8400E-01
CO+	2.8978E-05	1.0944E-03	1.4044E-03
CO2	5.1128E-03	5.7698E-04	5.9217E-04
C2	2.5120E-08	3.7227E-02	4.0701E-02

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M, } U_1 = 4.40E+02 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1577E+C2	8.7410E+02	1.1819E+04
T	2.5053E+01	4.0081E+01	4.2949E+01
RHO	1.4303E+C1	9.1745E+01	1.7431E+C2
M	-1.4861E+00	-3.5937E+00	-6.3413E+00
A	4.9644E+00	9.5112E+00	1.0394E+01
S	2.0557E+00	2.2177E+00	2.2903E+00
Z	1.9854E+00	2.4168E+00	2.5865E+00
GAME	9.7575E-01	9.7390E-01	9.5047E-01
U	2.2725E+01	3.6715E+00	2.6794E+00

SPECIES	MOLE FRACTIONS		
E-	1.2734E-04	3.8704E-02	4.4498E-02
O	4.8567E-01	5.7681E-01	6.0122E-01
O+	2.9970E-05	8.1914E-04	1.5451E-02
O++	3.5744E-23	5.2676E-15	1.0795E-13
O-	1.4483E-05	9.7454E-04	1.5722E-02
O2	1.3719E-02	8.0143E-03	7.3348E-02
O2+	1.5707E-05	9.1647E-05	1.3790E-04
O2-	5.4605E-07	2.8202E-05	4.7895E-05
C	5.6673E-03	1.7077E-01	2.1496E-01
C+	1.0445E-05	2.9127E-03	5.2790E-02
C++	2.7201E-17	4.6590E-11	7.7742E-10
C-	1.3744E-07	2.6444E-04	4.0567E-04
CO	4.9441E-01	2.5001E-01	1.5221E-01
CO+	7.6709E-05	1.1806E-02	1.4676E-02
CO2	2.7414E-02	7.6477E-04	6.7142E-04
C2	1.8550E-05	4.1240E-03	4.9987E-02

 $P_1 = 2.00E+04 \text{ N/SQ-M, } U_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0357E+02	9.6081E+03	1.2984E+04
T	2.7914E+01	4.2571E+01	4.7426E+01
RHO	1.4050E+01	8.8522E+01	1.0014E+02
M	-1.7959E+00	-4.1581E+00	-5.0105E+00
A	7.2738E+00	1.0142E+01	1.1206E+01
S	2.1124E+00	2.2860E+00	2.3677E+00
Z	2.0489E+00	2.5545E+00	2.7340E+00
GAME	9.2509E-01	9.4593E-01	9.6840E-01
U	2.4058E+01	3.8214E+00	3.9750E+00

SPECIES	MOLE FRACTIONS		
E-	4.4905E-04	5.8010E-03	1.0244E-02
O	5.0618E-01	5.5701E-01	6.1790E-01
O+	8.5578E-05	1.2987E-03	2.6825E-02
O++	8.3732E-21	4.1811E-14	1.2055E-12
O-	4.2361E-05	1.2591E-03	2.0277E-02
O2	5.5724E-03	6.9210E-03	5.9529E-02
O2+	1.5187E-05	1.1080E-04	1.6534E-04
O2-	7.6108E-07	3.3012E-05	4.7097E-05
C	2.9900E-02	2.0917E-01	2.5082E-01
C+	1.8098E-04	4.6726E-03	8.5261E-03
C++	3.8124E-15	2.0779E-10	2.0292E-09
C-	1.7445E-06	3.2801E-04	6.1356E-04
CO	4.5592E-01	1.6608E-01	9.4632E-02
CO+	2.1214E-04	1.3391E-03	1.5605E-02
CO2	1.2527E-02	4.5255E-04	7.0395E-04
C2	1.8825E-04	4.6259E-03	4.6286E-02

 $P_1 = 2.00E+04 \text{ N/SQ-M, } U_1 = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5866E+02	9.1177E+03	1.2704E+04
T	2.6666E+01	4.1242E+01	4.5500E+01
RHO	1.4121E+01	8.8970E+01	1.0154E+02
M	-1.6385E+00	-3.8654E+00	-4.8670E+00
A	7.1200E+00	9.8142E+00	1.0781E+01
S	2.0849E+00	2.2521E+00	2.3274E+00
Z	2.0148E+00	2.4851E+00	2.6597E+00
GAME	9.4358E-01	9.7934E-01	9.8917E-01
U	2.3380E+01	3.7187E+00	3.7761E+00

SPECIES	MOLE FRACTIONS		
E-	2.6095E-04	4.7700E-03	8.0855E-03
O	4.9643E-01	5.8781E-01	6.1040E-01
O+	5.6408E-05	1.0264E-03	2.0127E-02
O++	9.2664E-22	1.4496E-14	2.4242E-12
O-	2.8242E-05	1.0838E-03	1.7527E-03
O2	7.1771E-03	7.4423E-02	6.6353E-02
O2+	1.4675E-05	1.0018E-04	1.4720E-04
O2-	6.3877E-07	3.0475E-05	4.6525E-05
C	1.5854E-02	1.9024E-01	2.3494E-01
C+	7.4733E-05	3.7077E-03	6.7049E-02
C-	6.2221E-07	2.6062E-04	5.0353E-04
CO	4.7815E-01	1.5729E-01	1.2702E-01
CO+	1.4344E-04	1.2627E-02	1.5218E-02
CO2	1.7295E-02	5.9422E-04	3.0331E-04
C2	7.6009E-05	4.4344E-02	4.9044E-02

 $P_1 = 2.00E+04 \text{ N/SQ-M, } U_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.5025E+02	1.0182E+04	1.3798E+04
T	2.8927E+01	4.4017E+01	4.9598E+01
RHO	1.4083E+01	8.8144E+01	9.9158E+01
M	-1.9580E+00	-4.4577E+00	-5.1721E+00
A	7.4374E+00	1.0495E+01	1.1560E+01
S	2.1404E+00	2.3194E+00	2.3994E+00
Z	2.0873E+00	2.4243E+00	2.8055E+00
GAME	9.1417E-01	9.5799E-01	9.7709E-01
U	2.4750E+01	3.5601E+00	4.0953E+00

SPECIES	MOLE FRACTIONS		
E-	6.7420E-04	7.1442E-03	1.3142E-02
O	5.1589E-01	6.0656E-01	6.2324E-01
O+	1.1615E-04	1.6609E-03	3.6562E-02
O++	4.2812E-20	1.2584E-13	4.6602E-12
O-	5.8210E-05	1.4601E-03	2.2639E-03
O2	4.7147E-02	6.4062E-03	5.2635E-02
O2+	1.5766E-05	1.2341E-04	1.8739E-04
O2-	8.9672E-07	3.5207E-05	4.8857E-05
C	4.6188E-02	2.2672E-01	2.6383E-01
C+	2.2953E-04	5.8577E-03	1.0853E-02
C++	1.5595E-14	4.5016E-10	5.0932E-09
C-	3.6622E-06	4.0679E-04	7.3809E-04
CO	4.3040E-01	1.3681E-01	7.0917E-02
CO+	2.7512E-04	1.4050E-03	1.5758E-03
CO2	9.7996E-04	3.2550E-04	1.2998E-04
C2	3.4705E-04	4.6711E-03	4.1718E-02

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

P1 = 2.00E+04 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.9845E+02	1.0805E+04	1.4699E+04
T	2.9704E+01	4.5618E+01	5.2094E+01
RHO	1.4162E+01	8.7946E+01	9.8242E+01
H	-2.1248E+00	-4.7462E+00	-5.7499E+00
A	7.6062E+00	1.0972E+01	1.2128E+01
S	2.1681E+00	2.2522E+00	2.4746E+00
Z	2.1289E+00	2.6933E+00	2.8721E+00
GAME	9.1205E-01	9.6210E-01	9.8701E-01
U	2.5448E+01	4.1042E+00	4.2845E+00

SPECIES	MOLE FRACTIONS		
E-	9.3176E-04	8.8402E-03	1.7025E-02
O	5.2567E-01	6.1470E-01	6.2593E-01
O+	1.4875E-04	2.1500E-03	5.0759E-03
O++	1.5954E-19	3.9742E-13	1.0341E-11
O-	7.5683E-05	1.6862E-02	2.6920E-03
O2	4.1869E-03	5.8739E-03	4.5740E-03
O2+	1.6477E-05	1.3800E-04	2.1317E-04
O2-	1.0434E-06	3.8021E-05	4.9742E-05
C	6.3577E-02	2.4251E-01	2.7331E-01
C+	5.1745E-04	7.3174E-03	1.3786E-02
C++	4.6843E-14	9.0705E-10	1.2276E-08
C-	6.4726E-06	4.9651E-04	8.4909E-04
CO	4.0320E-01	1.1000E-01	5.1260E-02
CO+	3.3228E-04	1.4554E-03	1.7613E-03
CO2	7.9885E-04	2.4018E-04	7.8431E-05
C2	5.3874E-04	4.5531E-03	3.5768E-03

P1 = 2.00E+04 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.9922E+02	1.2141E+04	1.4682E+04
T	3.1317E+01	4.5404E+01	5.7858E+01
RHO	1.4374E+01	8.7027E+01	9.6590E+01
H	-2.4727E+00	-4.6954E+00	-5.5474E+00
A	7.9546E+00	1.1684E+01	1.3011E+01
S	3.2235E+00	2.6168E+00	2.8028E+00
Z	2.2194E+00	2.8239E+00	2.9871E+00
GAME	9.1035E-01	9.7889E-01	9.8018E-01
U	2.6854E+01	4.4420E+00	4.6021E+00

SPECIES	MOLE FRACTIONS		
E-	1.5451E-03	1.2822E-02	2.8237E-02
O	5.4514E-01	6.2513E-01	6.2725E-01
O+	2.2204E-04	2.7563E-03	9.8255E-03
O++	1.3625E-18	4.4017E-12	7.2194E-10
O-	1.1581E-05	2.2105E-02	2.7015E-03
O2	3.5622E-03	4.7412E-03	2.2393E-03
O2+	1.8257E-05	1.7358E-04	2.7789E-04
O2-	1.3665E-06	4.1296E-05	4.8412E-05
C	9.9481E-02	2.4797E-01	2.8050E-01
C+	1.0022E-03	1.1362E-02	2.1363E-02
C++	2.5905E-12	5.2871E-09	8.7497E-08
C-	1.4053E-05	7.0274E-04	1.1043E-03
CO	3.4492E-01	6.8521E-02	2.5599E-02
CO+	4.3786E-04	1.4942E-03	1.4494E-03
CO2	5.6202E-04	1.0821E-04	2.6152E-05
C2	9.7178E-04	3.8497E-03	2.3196E-03

P1 = 2.00E+04 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4814E+02	1.1462E+04	1.5667E+04
T	3.0582E+01	4.7405E+01	5.4879E+01
RHO	1.4266E+01	8.7598E+01	9.7343E+01
H	-2.2962E+00	-4.6877E+00	-5.1475E+00
A	7.7788E+00	1.1277E+01	1.2584E+01
S	2.1958E+00	2.3848E+00	2.4692E+00
Z	2.1731E+00	2.7402E+00	2.9212E+00
GAME	9.1046E-01	9.7092E-01	9.8408E-01
U	2.6150E+01	4.2448E+00	4.4862E+00

SPECIES	MOLE FRACTIONS		
F	1.2214E-03	1.1016E-02	2.2085E-02
O	5.3544E-01	6.2087E-01	6.2558E-01
O+	1.8423E-04	2.8222E-03	7.0952E-03
O++	4.8539E-19	1.3178E-12	8.2004E-11
O-	9.4845E-05	1.0222E-02	3.0032E-03
O2	3.8274E-03	5.3147E-03	2.9203E-03
O2+	1.7322E-05	1.5472E-04	2.4211E-04
O2-	1.2007E-06	3.9585E-05	4.9676E-05
C	8.1461E-02	2.5612E-01	2.7882E-01
C+	7.4148E-04	9.1267E-03	1.7328E-02
C++	1.1664E-13	2.2655E-09	3.4785E-08
C-	1.0258E-05	5.9412E-04	9.9548E-04
CO	3.7520E-01	8.4076E-02	3.6336E-02
CO+	3.8458E-04	1.4842E-03	1.5172E-03
CO2	6.6624E-04	1.6494E-04	4.5531E-05
C2	7.5073E-04	4.2721E-03	2.0201E-03

P1 = 2.00E+04 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0516E+03	1.2838E+04	1.7737E+04
T	3.2016E+01	5.1624E+01	6.0007E+01
RHO	1.4485E+01	8.6271E+01	9.6056E+01
H	-2.6528E+00	-4.7431E+00	-5.9675E+00
A	8.1326E+00	1.2102E+01	1.3407E+01
S	2.2511E+00	2.4681E+00	2.5525E+00
Z	2.2671E+00	2.8825E+00	3.0320E+00
GAME	9.1121E-01	9.8622E-01	9.7341E-01
U	2.7557E+01	4.6249E+00	4.8035E+00

SPECIES	MOLE FRACTIONS		
E-	1.9031E-03	1.7455E-02	3.5577E-02
O	5.5462E-01	6.2715E-01	6.1634E-01
O+	2.6835E-04	5.0521E-03	1.3280E-02
O++	3.3649E-18	1.6623E-11	1.2094E-09
O-	1.3855E-04	2.4698E-03	2.7132E-03
O2	3.3515E-03	4.1679E-03	2.8519E-03
O2+	1.9354E-05	1.9485E-04	3.0392E-04
O2-	1.5409E-06	4.1825E-05	4.6582E-05
C	1.1727E-01	2.7494E-01	2.7945E-01
C+	1.2991E-03	1.4083E-02	2.5572E-02
C++	5.2767E-13	1.2541E-08	2.0486E-07
C-	2.1009E-05	8.1142E-04	1.1868E-03
CO	3.1857E-01	4.8722E-02	1.8468E-02
CO+	4.7733E-04	1.4778E-03	1.3678E-03
CO2	4.7745E-04	6.8296E-05	1.5307E-05
C2	1.1910E-03	2.3326E-03	1.8044E-03

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

P1 = 2.00E+04 N/SQ-M, US1= 8.20E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.10E+03	1.3E+04	1.8805E+04
T	3.2708E+01	5.4046E+01	6.3957E+01
RHO	1.4E+04	8.5339E+01	9.5611E+01
H	-2.8380E+00	-6.0847E+00	-7.3862E+00
A	8.3178E+00	1.2506E+01	1.1784E+01
S	2.2794E+00	2.4788E+00	2.5689E+00
Z	2.3173E+00	2.0354E+00	3.0753E+00
GAME	9.1282E-01	9.8E-01	9.6E-01
U	2.8761E+01	4.8364E+00	5.0E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3104E-02	2.2018E-02	4.7E-02
O	5.6407E-01	6.267E-01	6.0843E-01
O+	7.2005E-04	6.81E-03	1.74E-02
O++	8.1115E-18	6.0E-11	3.9E-00
N-	1.6371E-04	2.7024E-03	3.0748E-02
N2	3.1717E-02	3.6217E-03	2.4447E-02
O2+	1.062E-05	2.177E-04	3.2344E-04
N2-	1.7243E-06	4.1E-05	4.21E-05
C	1.3513E-01	2.705E-01	2.7634E-01
C+	1.6441E-03	1.7294E-02	2.5847E-02
C++	1.0294E-12	2.5679E-08	4.4148E-07
C-	2.8236E-05	9.1E-04	1.2403E-02
CO	2.9081E-01	2.67E-02	1.253E-02
CO+	5.1927E-04	1.418E-02	1.2780E-02
CO2	4.044E-04	4.180E-05	9.187E-04
C2	1.4050E-02	2.782E-02	1.2E-02

P1 = 2.00E+04 N/SQ-M, US1= 8.60E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2168E+03	1.4E+04	2.0997E+04
T	3.4082E+01	5.9249E+01	6.9895E+01
RHO	1.4745E+01	8.3521E+01	9.5156E+01
H	-3.2220E+00	-6.7918E+00	-8.2E+00
A	8.702E+00	1.3238E+01	1.4E+01
S	2.3359E+00	2.5781E+00	2.6780E+00
Z	2.4211E+00	2.02E+00	3.15E+00
GAME	9.1781E-01	9.778E-01	9.512E-01
U	2.9664E+01	5.2443E+00	5.4348E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.2813E-02	3.2950E-02	4.1400E-02
O	5.8208E-01	6.1911E-01	5.887E-01
O+	4.4951E-04	1.2078E-02	2.7717E-02
O++	4.3915E-17	6.884E-10	2.892E-08
N-	7.2091E-04	2.229E-03	4.3223E-03
N2	7.868E-03	2.7023E-03	1.2308E-02
O2+	2.3683E-05	2.6614E-04	3.84E-04
N2-	2.1080E-06	3.8940E-05	3.8815E-05
C	1.6E+01	2.8037E-01	2.6711E-01
C+	2.4839E-03	2.4778E-02	3.7841E-02
C++	3.5326E-12	1.4827E-07	1.6084E-06
C-	4.6E+03	1.0758E-02	1.2703E-03
CO	2.3635E-01	1.9202E-03	7.7687E-03
CO+	5.9373E-04	1.3116E-03	1.0950E-03
CO2	2.8706E-04	1.5489E-05	3.5550E-06
C2	1.77E-03	1.8074E-03	8.3534E-04

P1 = 2.30E+04 N/SQ-M, US1= 8.40E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1605E+03	1.4E+04	1.989E+04
T	3.291E+01	5.6E+01	6.4945E+01
RHO	1.4674E+01	8.407E+01	9.57E+01
H	-3.0277E+00	-6.4E+00	-7.8179E+00
A	8.5067E+00	1.284E+01	1.4147E+01
S	2.3075E+00	2.5088E+00	2.5077E+00
Z	2.3584E+00	2.02E+00	3.11E+00
GAME	9.1502E-01	9.8307E-01	9.5946E-01
U	2.8963E+01	5.0421E+00	5.2E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E	2.7645E-03	2.7E-02	5.227E-02
O	5.7219E-01	6.2399E-01	5.9903E-01
O+	3.7E-04	5.1219E-03	2.77E-02
O++	1.88E-17	2.117E-10	1.204E-08
N-	1.5059E-04	3.07E-03	4.1811E-02
N2	3.0149E-02	3.1299E-02	2.1220E-03
O2+	2.1583E-05	2.6189E-04	3.609E-04
N2-	1.513E-06	4.049E-05	4.1629E-05
C	1.5250E-01	2.8121E-01	2.7208E-01
C+	2.0346E-03	2.0E-02	3.940E-02
C++	1.9284E-12	6.8084E-08	8.716E-07
C-	3.6715E-05	1.004E-03	1.2669E-02
CO	2.6337E-01	2.6E-02	1.01E-02
CO+	5.5751E-04	1.380E-03	1.1871E-02
CO2	3.4203E-04	2.5E-05	5.722E-06
C2	1.6016E-02	2.2E-02	1.079E-02

P1 = 2.00E+04 N/SQ-M, US1= 8.80E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2744E+03	1.5E+04	2.2094E+04
T	3.4783E+01	6.1E+01	7.272E+01
RHO	1.4807E+01	8.2777E+01	9.5128E+01
H	-3.4208E+00	-7.1E+00	-8.7047E+00
A	8.9036E+00	1.3E+01	1.485E+01
S	2.3640E+00	2.5E+00	2.6570E+00
Z	2.4742E+00	3.0E+00	3.1038E+00
GAME	9.2114E-01	9.7104E-01	9.5016E-01
U	3.0363E+01	5.492E+00	5.5968E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.9629E-03	4.1084E-02	7.0E-02
O	5.9053E-01	6.1248E-01	5.7708E-01
O+	5.3248E-04	1.5E-02	2.3533E-02
O++	4.6413E-17	7.040E-09	4.6764E-08
N-	7.522E-04	2.0E-03	4.6328E-02
N2	2.7E-02	2.6E-02	1.6002E-02
O2+	2.5119E-05	2.897E-04	1.0479E-04
N2-	2.0E-06	3.707E-05	3.4E-05
C	1.8583E-01	2.77E-01	2.6196E-01
C+	2.9E-02	2.87E-02	4.1E-02
C++	4.2E-12	3.024E-07	2.7E-07
C-	5.797E-05	1.1E-02	1.2E-02
CO	2.1039E-01	1.378E-02	6.0700E-02
CO+	6.7E-04	1.2E-02	1.0101E-02
CO2	2.3929E-04	5.6E-05	2.4263E-04
C2	1.971E-02	1.43E-02	6.5755E-04

TABLE I. - Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_1 = 9.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2331E+03	1.4137E+03	2.2193E+04
T	3.5511E+01	4.1526E+01	7.5526E+01
RHO	1.4847E+07	8.2100E+01	9.5002E+01
H	-3.6242E+00	-7.5216E+00	-9.1602E+00
A	9.1143E+00	1.2997E+01	1.5709E+01
S	2.3924E+00	2.5548E+00	2.6858E+00
Z	2.5784E+00	2.1024E+00	2.2725E+00
GAME	9.2512E-01	9.6460E-01	9.4736E-01
U	1.1055E+01	5.6241E+00	5.7523E+00

SPECIES		MOLE FRACTIONS	
E-	4.5370E-03	4.8797E-02	8.0149E-02
D	5.9855E-01	6.0646E-01	5.6549E-01
O+	6.3222E-04	1.5588E-02	3.5849E-02
O++	2.1864E-16	5.5344E-09	1.4382E-07
O-	2.8880E-04	3.7218E-02	4.4867E-02
O2-	2.5928E-02	2.0396E-02	1.2984E-02
O2+	2.6925E-05	2.1188E-04	4.2101E-04
O2+	2.5001E-06	2.4995E-07	3.2199E-07
C	2.3164E-01	2.7298E-01	2.5657E-01
C+	3.5844E-03	3.2646E-02	4.4669E-02
C++	1.1371E-11	5.7773E-07	4.5047E-06
C-	7.0992E-05	1.1559E-03	1.2778E-03
CO	1.8509E-01	1.0977E-02	4.8029E-02
CO+	6.5532E-04	1.1580E-02	9.2624E-04
CO2	1.9667E-04	6.1803E-04	1.6317E-04
C2	2.2336E-03	1.1232E-02	5.1201E-04

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_1 = 9.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4543E+03	1.7888E+04	2.6351E+04
T	3.7089E+01	6.9637E+01	8.1007E+01
RHO	1.4858E+01	8.0919E+01	9.4508E+01
H	-4.0444E+00	-8.3026E+00	-1.0058E+01
A	9.5684E+00	1.4527E+01	1.7920E+01
S	2.4492E+00	2.6498E+00	2.7424E+00
Z	2.6390E+00	3.1745E+00	2.7113E+00
GAME	9.3537E-01	9.5466E-01	9.4482E-01
U	3.2441E+01	5.9655E+00	6.0579E+00

SPECIES		MOLE FRACTIONS	
E-	6.2526E-03	6.4666E-02	9.9858E-02
D	6.1350E-01	5.8526E-01	5.3888E-01
O+	9.0819E-04	2.9204E-02	5.2723E-02
O++	1.1754E-15	3.0978E-08	5.5458E-07
O-	3.7053E-04	3.9708E-03	4.4569E-03
O2-	2.3065E-02	1.5652E-03	1.0675E-03
O2+	3.1121E-05	3.4914E-04	4.4061E-04
O2+	2.8758E-06	3.0527E-05	2.7475E-05
C	2.3103E-01	2.6452E-01	2.4570E-01
C+	5.0877E-03	4.0071E-02	5.0525E-02
C++	3.7023E-11	1.7638E-07	1.0715E-06
C-	1.0247E-04	1.1625E-03	1.1396E-03
CO	1.3744E-01	4.6829E-02	3.0789E-02
CO+	7.0242E-04	1.0028E-02	7.7050E-04
CO2	1.2557E-04	2.7123E-04	7.7122E-04
C2	2.1362E-03	7.1498E-04	2.1706E-04

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_1 = 9.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3931E+03	1.7147E+04	2.4280E+04
T	3.6276E+01	6.7107E+01	7.8799E+01
RHO	1.4864E+01	8.1506E+01	9.4899E+01
H	3.8370E+00	7.5216E+00	-9.4239E+00
A	9.3351E+00	1.4214E+01	1.5562E+01
S	2.4209E+00	2.6225E+00	2.7142E+00
Z	2.5836E+00	3.1287E+00	3.2715E+00
GAME	9.2982E-01	9.5514E-01	9.4567E-01
U	3.1752E+01	5.7953E+00	5.9034E+00

SPECIES		MOLE FRACTIONS	
E-	5.3228E-02	5.6956E-02	8.9902E-02
D	6.0633E-01	5.6549E-01	5.5218E-01
O+	7.5520E-04	2.4154E-02	4.6608E-02
O++	4.9927E-16	1.3638E-08	2.9012E-07
O-	3.2774E-04	3.8716E-03	4.4012E-03
O2-	2.4523E-02	1.7897E-03	1.2225E-02
O2+	2.8914E-05	3.2175E-04	4.3298E-04
O2+	2.6927E-06	2.2795E-05	3.0327E-05
C	2.1674E-01	2.6944E-01	2.5114E-01
C+	4.2740E-03	3.6458E-02	4.7710E-02
C++	2.0369E-11	1.0374E-07	1.0689E-06
C-	8.5771E-05	1.1671E-03	1.1875E-03
CO	1.6073E-01	4.6943E-02	3.8322E-02
CO+	6.8055E-04	1.0797E-02	8.6677E-04
CO2	1.5904E-04	4.0514E-04	1.1157E-04
C2	2.1067E-02	8.0987E-04	4.0244E-04

 $P_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_1 = 9.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5165E+03	1.8591E+04	2.6383E+04
T	3.7968E+01	7.2115E+01	8.7649E+01
RHO	1.4824E+01	8.0707E+01	9.4048E+01
H	4.2612E+00	8.6594E+00	1.0576E+01
A	9.8166E+00	1.4840E+01	1.7280E+01
S	2.4777E+00	2.6767E+00	2.7703E+00
Z	2.6945E+00	3.2104E+00	2.7518E+00
GAME	9.4195E-01	9.5118E-01	9.4484E-01
U	3.3124E+01	6.1241E+00	6.1078E+00

SPECIES		MOLE FRACTIONS	
E-	7.3740E-03	7.4259E-02	1.0592E-01
D	6.2007E-01	5.7447E-01	5.2519E-01
O+	1.1029E-03	3.4485E-02	6.1123E-02
O++	2.8559E-15	6.0523E-08	1.0084E-06
O-	4.1771E-04	4.0308E-03	4.3850E-03
O2-	2.1531E-03	1.3764E-03	9.3060E-04
O2+	3.3579E-05	3.6300E-04	4.4800E-04
O2+	3.0450E-06	2.8227E-05	2.7685E-05
C	2.4436E-01	2.5933E-01	2.7029E-01
C+	6.0603E-03	4.3480E-02	5.1300E-02
C++	6.8497E-11	2.8606E-06	1.5747E-05
C-	1.2125E-04	1.1448E-03	1.0854E-03
CO	1.1537E-01	5.2227E-02	2.6885E-02
CO+	7.1916E-04	9.2800E-04	4.0927E-04
CO2	9.7258E-05	1.8557E-04	5.3851E-04
C2	2.1185E-03	5.6970E-04	2.5661E-04

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

P1 = 2.00E+04 N/SQ-M, US1 = 9.80E+03 M/SEC

P1 = 2.00E+04 N/SQ-M, US1 = 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5798E+03	1.9267E+04	2.7375E+04
T	3.8932E+01	7.4518E+01	8.6367E+01
RHO	1.4758E+01	7.9652E+01	9.7404E+01
M	-4.4822E+00	-9.1077E+00	-1.1064E+01
A	1.0083E+01	1.5148E+01	1.6648E+01
S	2.5060E+00	2.7031E+00	2.7980E+00
Z	7.7496E+00	3.2461E+00	3.7934E+00
GAME	9.4974E-01	9.4867E-01	9.4761E-01
U	3.3805E+01	6.2759E+00	6.3435E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6441E+03	1.9905E+04	2.8009E+04
T	4.0004E+01	7.6925E+01	8.9025E+01
RHO	1.4659E+01	7.8808E+01	9.2540E+01
M	-4.7087E+00	-9.5136E+00	-1.1560E+01
A	1.0370E+01	1.5665E+01	1.7021E+01
S	2.5341E+00	2.7301E+00	2.8256E+00
Z	2.8036E+00	3.2873E+00	3.6322E+00
GAME	9.5887E-01	9.4697E-01	9.4704E-01
U	3.4478E+01	6.4230E+00	6.4893E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.7497E-03	8.3175E-02	1.2019E-01
O	6.2591E-01	5.6320E-01	5.1108E-01
O+	1.3568E-03	4.0489E-02	6.8819E-02
O++	7.2906E-15	1.2931E-07	1.7634E-06
N-	4.6990E-04	4.0546E-03	4.2751E-03
N2	1.9904E-03	1.2138E-03	8.0845E-04
N2+	3.6339E-05	3.7487E-04	4.4271E-04
N2-	3.1976E-06	2.5955E-05	2.1976E-05
C	2.5633E-01	2.5410E-01	2.5489E-01
C+	1.2416E-03	4.4443E-02	5.5767E-02
C++	1.3042E-10	4.4341E-06	2.2587E-05
C-	1.4229E-04	1.1171E-03	1.0267E-03
CO	9.4713E-02	4.2915E-03	2.0173E-03
CO+	7.3040E-04	8.7686E-04	6.3229E-04
CO2	7.2752E-05	1.2905E-04	3.7777E-07
C2	2.0507E-03	4.5644E-04	1.9831E-04

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0474E-02	9.2522E-02	1.3040E-01
O	6.3085E-01	5.7110E-01	4.9661E-01
O+	1.6963E-03	4.7792E-02	7.7588E-02
O++	1.9850E-14	2.4547E-07	2.7777E-06
N-	5.2781E-04	4.0618E-03	4.1628E-03
N2	1.8179E-03	1.0661E-03	6.9950E-04
N2+	3.9465E-05	3.8277E-04	4.3746E-04
N2-	3.3100E-06	2.3616E-05	1.9376E-05
C	2.6728E-01	2.4967E-01	2.7944E-01
C+	8.7007E-03	4.6601E-02	5.7893E-02
C++	2.5806E-10	6.7052E-06	3.1741E-05
C-	1.6569E-04	1.0797E-03	9.5267E-04
CO	7.5730E-02	3.4675E-03	1.6284E-03
CO+	7.3526E-04	7.8682E-04	5.6972E-04
CO2	5.2368E-05	9.0042E-07	2.6583E-07
C2	1.9322E-03	3.6440E-04	1.7708E-04

P1 = 2.00E+04 N/SQ-M, US1 = 1.00E+04 M/SEC

P1 = 2.00E+04 N/SQ-M, US1 = 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8087E+03	2.1265E+04	3.0258E+04
T	4.3344E+01	9.2697E+01	9.5607E+01
RHO	1.4248E+01	7.6107E+01	8.9295E+01
M	-5.2916E+00	-1.0765E+01	-1.2831E+01
A	1.1184E+01	1.7257E+01	1.7985E+01
S	2.5030E+00	2.7541E+00	2.8043E+00
Z	2.9291E+00	3.2789E+00	3.6490E+00
GAME	9.8526E-01	9.4588E-01	9.5370E-01
U	3.6126E+01	6.7727E+00	6.8543E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9748E+03	2.2276E+04	3.1867E+04
T	4.7689E+01	8.8271E+01	1.0721E+02
RHO	1.3679E+01	7.2666E+01	8.4924E+01
M	-5.9021E+00	-1.1651E+01	-1.4151E+01
A	1.2020E+01	1.7070E+01	1.9007E+01
S	2.6688E+00	2.8145E+00	2.9628E+00
Z	3.0337E+00	3.4807E+00	3.8711E+00
GAME	9.9880E-01	9.4879E-01	9.6272E-01
U	3.7728E+01	7.1127E+00	7.2425E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7268E-02	1.1637E-01	1.5722E-01
O	6.3759E-01	5.1977E-01	4.5921E-01
O+	3.2315E-03	6.2689E-02	9.7415E-02
O++	3.4078E-15	9.8714E-07	9.7045E-06
N-	7.0043E-04	3.8766E-03	3.6966E-03
N2	1.3551E-03	7.6827E-04	4.7691E-04
N2+	4.9376E-05	2.8747E-04	4.0818E-04
N2-	3.4089E-06	1.8079E-05	1.3535E-05
C	2.8547E-01	2.3571E-01	2.1586E-01
C+	1.4211E-02	5.6490E-02	6.3324E-02
C++	1.7501E-09	1.6514E-05	6.9061E-05
C-	2.3375E-04	9.6278E-04	8.0737E-04
CO	3.7708E-02	2.0937E-03	9.7618E-04
CO+	7.1388E-04	6.2884E-04	4.3257E-04
CO2	1.8728E-05	3.8307E-07	1.1078E-07
C2	1.4400E-03	2.1082E-04	8.7915E-05

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.9726E-02	1.4106E-01	1.8456E-01
O	6.3303E-01	4.8533E-01	4.2047E-01
O+	6.7005E-03	8.2027E-02	1.1887E-01
O++	8.0795E-12	3.2736E-06	2.7561E-05
N-	8.9855E-04	3.5678E-03	3.1616E-03
N2	9.2849E-04	5.4521E-04	3.1474E-04
N2+	6.2549E-05	2.7340E-04	2.6226E-04
N2-	3.1883E-06	1.3227E-05	8.9107E-06
C	2.8721E-01	2.2180E-01	2.0198E-01
C+	2.3513E-02	6.2476E-02	6.8503E-02
C++	1.4326E-08	3.5815E-05	1.2939E-04
C-	3.0417E-04	8.3025E-04	6.5567E-04
CO	1.6066E-02	1.2873E-03	5.7884E-04
CO+	6.4701E-04	4.9425E-04	3.2187E-04
CO2	5.2544E-06	1.6781E-07	4.5823E-08
C2	8.9487E-04	1.2714E-04	4.9190E-05

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_{S1} = 1.1E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1561E+03	2.3412E+04	3.3503E+04
T	5.2420E+01	9.2866E+01	1.0910E+02
RMO	1.3175E+01	6.9505E+01	8.0784E+01
M	-6.5407E+00	-1.2783E+01	-1.5539E+01
A	1.2725E+01	1.7924E+01	2.0105E+01
S	2.7308E+00	2.9251E+00	3.0298E+00
Z	3.1219E+00	3.5885E+00	3.8014E+00
GAME	9.8952E-01	9.5779E-01	9.7466E-01
U	3.9323E+01	7.4644E+00	7.6601E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.8086E-02	1.6611E-01	2.1205E-01
O	6.1727E-01	4.7011E-01	2.8133E-01
O+	1.3095E-02	1.0137E-01	1.4050E-01
O++	1.4245E-10	9.1512E-04	7.1332E-05
D-	1.0742E-03	3.1896E-03	2.6177E-03
O2	6.3572E-04	3.8251E-04	2.0235E-04
O2+	7.6979E-05	3.4738E-04	3.0948E-04
O2-	2.8052E-06	5.4007E-06	5.6273E-06
r	2.7536E-01	2.0870E-01	1.8805E-01
C+	3.9781E-02	6.7749E-02	7.2473E-02
C++	9.4623E-08	7.1367E-08	2.6778E-04
C-	3.5387E-04	7.0166E-04	5.2178E-04
CO	7.0900E-03	8.0702E-04	2.4158E-04
CO+	5.6378E-04	3.8427E-04	2.3575E-04
CO2	1.5208E-04	7.5364E-08	1.8882E-08
C2	5.1351E-04	7.2779E-08	2.7566E-05

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_{S1} = 1.2E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5378E+03	2.6271E+04	2.7958E+04
T	6.1073E+01	1.0570E+02	1.2445E+02
RMO	1.2409E+01	6.5059E+01	7.4707E+01
M	-7.9044E+00	-1.5212E+01	-1.8580E+01
A	1.3944E+01	1.9809E+01	2.2559E+01
S	2.8467E+00	3.0466E+00	3.1584E+00
Z	3.2956E+00	3.8201E+00	4.0826E+00
GAME	9.6597E-01	9.7179E-01	1.0016E+00
U	4.2585E+01	8.2632E+00	8.6392E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.2937E-02	2.1582E-01	2.5582E-01
O	5.6840E-01	3.7878E-01	2.0525E-01
O+	3.3835E-02	1.4087E-01	1.8178E-01
O++	8.8271E-09	5.6304E-05	3.9626E-04
D-	1.2635E-03	2.3792E-03	1.6540E-03
O2	3.4329E-04	1.8105E-04	7.7649E-05
O2+	1.0080E-04	2.7655E-04	2.0507E-04
O2-	2.0764E-06	4.4413E-06	2.0284E-06
r	2.3984E-01	1.8362E-01	1.6027E-01
C+	6.0725E-02	7.6723E-02	8.3097E-02
C++	1.3587E-06	2.4225E-04	8.9868E-04
C-	3.7626E-04	4.8088E-04	3.1486E-04
CO	2.0498E-03	3.1664E-04	1.1616E-04
CO+	4.1845E-04	2.2559E-04	1.2079E-04
CO2	2.2103E-07	1.5849E-08	3.1423E-09
C2	1.8727E-04	2.6080E-05	8.6302E-06

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_{S1} = 1.20E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3424E+03	2.4733E+04	2.5535E+04
T	5.6917E+01	9.5405E+01	1.1649E+02
RMO	1.2870E+01	6.7102E+01	7.7445E+01
M	7.2081E+00	1.2579E+01	1.7014E+01
A	1.3349E+01	1.8827E+01	2.1294E+01
S	2.7895E+00	2.9852E+00	3.0950E+00
Z	3.2077E+00	3.7004E+00	3.9789E+00
GAME	9.7602E-01	9.6164E-01	9.8821E-01
U	4.0942E+01	7.8437E+00	9.1248E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.9816E-02	1.9087E-01	2.3926E-01
O	5.9482E-01	4.1472E-01	3.4262E-01
O+	2.2303E-02	1.2005E-01	1.6171E-01
O++	1.4277E-09	2.3388E-05	1.7313E-04
D-	1.1962E-03	2.7911E-03	2.1079E-03
O2	4.5733E-04	2.4631E-04	1.2688E-04
O2+	9.0115E-05	3.1448E-04	2.5590E-04
O2-	2.4217E-06	6.5710E-06	3.4346E-06
r	2.5804E-01	1.9612E-01	1.7415E-01
C+	4.8511E-02	7.2377E-02	7.8303E-02
C++	4.2079E-07	1.2354E-04	4.9787E-04
C-	3.7569E-04	5.8594E-04	4.0841E-04
CO	3.5942E-03	5.0597E-04	2.0006E-04
CO+	4.8438E-04	2.9673E-04	1.7003E-04
CO2	5.3305E-07	3.6777E-08	7.7233E-09
C2	3.0323E-04	4.2647E-08	1.5436E-05

 $p_1 = 2.00E+04 \text{ N/SQ-M}, \quad U_{S1} = 1.30E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7421E+03	2.7588E+04	4.0653E+04
T	6.4977E+01	1.1205E+02	1.3292E+02
RMO	1.2464E+01	6.3299E+01	7.2346E+01
M	-8.6296E+00	-1.5509E+01	-7.0235E+01
A	1.4529E+01	2.0844E+01	2.3858E+01
S	2.9019E+00	3.1046E+00	3.2202E+00
Z	3.3869E+00	3.9433E+00	4.2305E+00
GAME	9.5951E-01	9.8333E-01	1.0122E+00
U	4.4244E+01	8.7225E+00	9.1959E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1648E-01	2.4007E-01	2.9134E-01
O	5.3962E-01	3.4390E-01	2.7012E-01
O+	4.7222E-02	1.6010E-01	1.9994E-01
O++	3.9065E-08	1.2618E-04	8.0093E-04
D-	1.2942E-03	1.9850E-03	1.2711E-03
O2	2.6447E-04	1.2120E-04	4.6674E-05
O2+	1.0864E-04	2.3675E-04	1.5985E-04
O2-	1.7679E-06	2.9279E-06	1.1677E-06
r	2.2245E-01	1.7143E-01	1.6468E-01
C+	7.0443E-02	8.0842E-02	8.7829E-02
C++	3.5130E-06	4.7278E-04	1.5643E-03
C-	3.6310E-04	3.9011E-04	2.3997E-04
CO	1.2658E-03	1.9834E-04	6.7173E-05
CO+	3.5801E-04	1.7001E-04	8.4792E-05
CO2	1.0285E-07	7.2727E-09	1.2773E-09
C2	1.1986E-04	1.5803E-05	4.8388E-06

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

P1 = 2.00E+04 N/SQ-M, US1 = 1.3E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9449E+03	2.9774E+04	4.7467E+04
T	6.8445E+01	1.1870E+02	1.4175E+02
RMO	1.2363E+01	6.1528E+01	7.3337E+01
M	-9.3824E+00	-1.7855E+01	-2.1972E+01
A	1.5114E+01	2.1928E+01	2.139E+01
S	2.9559E+00	3.1611E+00	3.7802E+00
Z	3.4816E+00	4.0734E+00	4.7800E+00
GAME	9.5575E-01	9.5723E-01	1.0179E+00
U	4.5913E+01	6.222E+00	6.7799E+00

SPECIES	MOLE FRACTIONS		
E-	1.3598E-01	2.4362E-01	3.1543E-01
O	5.0934E-01	3.1070E-01	2.7808E-01
O+	6.2048E-02	1.7834E-01	2.1548E-01
O++	1.3468E-07	2.4709E-04	1.6074E-03
C-	1.2875E-02	1.6204E-03	9.4549E-04
O2	2.0677E-04	7.5578E-05	2.7905E-05
O2+	1.1352E-04	1.9740E-04	1.7210E-04
O2-	1.4909E-06	1.8750E-04	6.4570E-07
C	2.0433E-01	1.6974E-01	1.3301E-01
C+	7.9129E-02	8.4907E-02	9.7391E-02
C++	7.7878E-06	7.1646E-04	2.6091E-03
C-	3.4164E-04	3.1244E-04	1.8207E-04
CO	8.2344E-04	1.2257E-04	2.9783E-04
CO+	3.0673E-04	1.7469E-04	5.9293E-04
CO2	5.1447E-08	3.2195E-09	5.2841E-10
C2	7.8710E-06	9.4374E-06	2.7461E-06

P1 = 2.00E+04 N/SQ-M, US1 = 1.4E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4052E+03	3.2600E+04	5.0088E+04
T	7.5702E+01	1.2281E+02	1.5960E+02
RMO	1.2220E+01	5.8402E+01	6.7128E+01
M	-1.0977E+01	-2.0694E+01	-2.5659E+01
A	1.6307E+01	2.4132E+01	2.7516E+01
S	3.0614E+00	3.2696E+00	3.3900E+00
Z	3.6810E+00	4.3319E+00	4.4745E+00
GAME	9.5432E-01	1.0139E+00	1.0149E+00
U	4.9264E+01	1.0316E+01	1.0951E+01

SPECIES	MOLE FRACTIONS		
E-	1.8600E-01	2.0789E-01	3.5843E-01
O	4.4644E-01	2.4899E-01	1.8483E-01
O+	9.4589E-02	2.1071E-01	2.7700E-01
O++	1.0458E-06	1.0145E-03	5.2641E-03
O-	1.1968E-03	1.0264E-03	5.6064E-04
O2	1.2711E-04	3.2831E-07	1.0382E-05
O2+	1.1475E-04	1.2841E-04	6.9488E-04
O2-	1.0203E-04	7.1985E-07	2.2473E-07
C	1.7805E-01	1.357E-01	1.0831E-01
C+	9.2504E-02	9.2848E-02	9.9267E-02
C++	2.8403E-05	1.8927E-03	6.1023E-03
C-	2.8709E-04	1.4880E-04	1.058E-04
CO	3.8059E-04	4.7608E-05	1.4107E-05
CO+	2.1955E-04	6.8567E-05	2.928E-05
CO2	1.4844E-08	6.9171E-10	1.0262E-10
C2	3.4635E-05	3.4488E-04	9.5990E-07

P1 = 2.00E+04 N/SQ-M, US1 = 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1760E+03	3.1669E+04	4.6826E+04
T	7.2213E+01	1.2564E+02	1.5080E+02
RMO	1.2286E+01	6.0906E+01	6.845E+01
M	-1.0166E+01	-1.9252E+01	-2.3788E+01
A	1.5705E+01	2.3041E+01	2.6374E+01
S	3.0091E+00	3.2160E+00	3.3291E+00
Z	3.5757E+00	4.2005E+00	4.5302E+00
GAME	9.5419E-01	1.0060E+00	1.0182E+00
U	4.7588E+01	9.7464E+00	1.0284E+01

SPECIES	MOLE FRACTIONS		
E-	1.6320E-01	2.8629E-01	3.3806E-01
O	4.7814E-01	2.7870E-01	2.0932E-01
O+	7.7947E-02	1.9521E-01	2.2801E-01
O++	4.0250E-07	4.3549E-04	3.1274E-02
O-	1.2532E-03	1.2984E-03	7.3041E-04
O2	1.6209E-04	5.1411E-05	1.6747E-05
O2+	1.1550E-04	1.6076E-04	9.1935E-04
O2-	1.2422E-06	1.1715E-06	3.7976E-07
C	1.9157E-01	1.4741E-01	1.2006E-01
C+	8.6417E-02	8.8940E-02	9.6250E-02
C++	1.5476E-05	1.1805E-03	4.305E-03
C-	3.1551E-04	2.4758E-04	1.2827E-04
CO	5.5408E-04	7.6683E-05	2.7025E-05
CO+	2.6044E-04	9.3503E-05	4.1283E-05
CO2	2.7254E-08	1.5114E-09	2.2483E-10
C2	5.2632E-05	5.6890E-06	1.855E-06

P1 = 2.00E+04 N/SQ-M, US1 = 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6423E+03	3.5770E+04	5.3435E+04
T	7.9157E+01	1.4013E+02	1.6818E+02
RMO	1.2155E+01	5.8872E+01	6.5883E+01
M	-1.1816E+01	-2.2185E+01	2.7592E+01
A	1.4925E+01	2.5232E+01	2.8602E+01
S	3.1132E+00	3.3218E+00	3.4493E+00
Z	3.7855E+00	4.4344E+00	4.8153E+00
GAME	9.5555E-01	1.0179E+00	1.0102E+00
U	5.0938E+01	1.0898E+01	1.1008E+01

SPECIES	MOLE FRACTIONS		
E-	2.0820E-01	3.2816E-01	3.7716E-01
O	4.1466E-01	2.2212E-01	1.6366E-01
O+	1.1168E-01	2.2203E-01	2.4293E-01
O++	2.4803E-06	1.8175E-03	8.1700E-03
O-	1.1232E-03	8.0547E-04	4.2619E-04
O2	9.9154E-05	2.1005E-05	6.6131E-06
O2+	1.1173E-04	1.0116E-04	5.2686E-05
O2-	8.2441E-07	4.3969E-07	1.3721E-07
C	1.6565E-01	1.2429E-01	9.7642E-02
C+	9.7597E-02	9.6330E-02	1.0132E-01
C++	4.9141E-05	2.8935E-03	8.5099E-03
C-	2.5754E-04	1.8288E-04	8.3840E-04
CO	2.6541E-04	2.5742E-05	8.9224E-04
CO+	1.8452E-04	5.0142E-05	2.1055E-04
CO2	8.2379E-09	3.2147E-10	4.9677E-11
C2	2.4370E-05	2.1124E-06	5.9685E-07

TABLE I.- Continued

$$p_1 = 20 \text{ kN/m}^2$$

 $P_1 = 2.00E+04 \text{ N/SQ-M, } US_1 = 1.55E+04 \text{ M/SEC}$
 $P_1 = 2.00E+04 \text{ N/SQ-M, } US_1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8871E+03	2.7645E+04	7.4822E+04
T	8.2616E+01	1.4748E+02	1.7666E+02
RHO	1.2086E+01	5.5431E+01	4.4881E+01
M	1.2484E+01	-2.3722E+01	2.0578E+01
A	1.7542E+01	2.4262E+01	2.9477E+01
S	3.1644E+00	3.3728E+00	3.7039E+00
Z	3.8929E+00	4.5934E+00	4.9574E+00
GAME	9.5853E-01	1.0181E+00	1.3056E+00
U	5.2609E+01	1.1487E+01	1.2038E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1355E+03	3.5587E+04	6.0218E+04
T	8.4117E+01	1.5473E+02	1.8477E+02
RHO	1.2008E+01	5.4272E+01	4.3957E+01
M	-1.3580E+01	-2.5308E+01	-2.1414E+01
A	1.8221E+01	2.7232E+01	3.1721E+01
S	3.2150E+00	3.4222E+00	3.5566E+00
Z	4.0032E+00	4.7202E+00	5.0957E+00
GAME	9.6316E-01	1.0144E+00	1.0024E+00
U	5.4275E+01	1.2040E+01	1.2541E+01

SPECIES ----- MOLE FRACTIONS -----

E-	2.3002E-01	3.4714E-01	3.9500E-01
O	3.8304E-01	1.9807E-01	1.4475E-01
O+	1.2897E-01	2.7341E-01	2.4629E-01
O++	5.4289E-06	3.0496E-02	1.1947E-02
O-	1.0369E-03	4.3178E-04	3.4161E-04
O2	6.6825E-05	1.3511E-05	4.2687E-06
O2+	1.0620E-04	7.9077E-05	3.9791E-05
O2-	6.5350E-07	2.7098E-07	8.5096E-08
C	1.5419E-01	1.1347E-01	8.7738E-02
C+	1.0189E-01	9.9733E-02	1.0744E-01
C++	8.1353E-05	4.2487E-02	1.1344E-02
C-	2.2909E-24	1.2030E-04	6.6330E-05
CO	1.8612E-04	1.8829E-05	5.7396E-06
CO+	1.5364E-04	3.6743E-05	1.5198E-05
CO2	4.6124E-09	1.5367E-10	2.4815E-11
C2	1.6669E-05	1.2157E-06	3.8005E-07

SPECIES ----- MOLE FRACTIONS -----

E-	2.5114E-01	3.6464E-01	4.1140E-01
O	3.5186E-01	1.7698E-01	1.2846E-01
O+	1.4621E-01	2.4124E-01	2.4727E-01
O++	1.1249E-05	4.8107E-02	1.6407E-02
O-	9.4176E-04	4.9906E-04	2.7182E-04
O2	5.8627E-05	8.8464E-06	2.8342E-06
O2+	9.9132E-05	6.1769E-05	3.0286E-05
O2-	5.0828E-07	1.5910E-07	5.4458E-08
C	1.4352E-01	1.0726E-01	7.8969E-02
C+	1.0556E-01	1.0225E-01	1.0244E-01
C++	1.3030E-04	6.0157E-03	3.54479E-02
C-	2.0122E-04	9.5502E-05	5.3378E-05
CO	1.3072E-04	1.2187E-05	3.8107E-06
CO+	1.2687E-04	2.7147E-05	1.1144E-05
CO2	2.5858E-09	7.6312E-11	1.3089E-11
C2	1.1437E-05	8.7959E-07	2.5048E-07

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1 = 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1C29E+00	1.9532E+01	2.7599E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0857E+00	1.1008E+00	1.1229E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS		
E-	3.0416E-53	9.0742E-44	3.1838E-35
O	3.2570E-15	2.0824E-12	1.2087E-10
O+	2.0095E-38	1.3371E-34	9.3941E-32
O++	0.	0.	0.
O-	9.3535E-59	2.8438E-48	5.7575E-39
O2	4.3592E-04	4.3992E-04	4.4002E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9637E-42	3.6815E-34
C	1.4928E-54	1.3109E-45	1.3198E-37
C+	8.2340E-65	1.8701E-56	5.0453E-49
C++	0.	0.	0.
C-	2.1456E-99	1.9434E-82	1.3067E-66
CO	2.2851E-12	2.1999E-09	2.0627E-07
CO+	3.3334E-37	7.3036E-33	1.6002E-29
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	9.1543E-79	7.9554E-66	6.2893E-54

P1 = 5.00E+04 N/SQ-M, US1 = 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9413E+02	2.9189E+02
T	3.8892E+00	5.6937E+00	6.5925E+00
RHO	8.0418E+00	3.4091E+01	4.4224E+01
H	8.8932E-01	8.0790E-01	7.6480E-01
A	1.8835E+00	2.2675E+00	2.4329E+00
S	1.1595E+00	1.1903E+00	1.2157E+00
Z	1.0000E+00	1.0002E+00	1.0012E+00
GAME	9.1255E-01	9.0285E-01	8.9681E-01
U	4.5382E+00	1.0730E+00	1.0071E+00

SPECIES	MOLE FRACTIONS		
E-	2.8184E-36	3.7560E-21	1.3022E-17
O	7.1611E-11	1.1913E-07	1.9067E-06
O+	3.0274E-32	3.6691E-27	2.7696E-24
O++	0.	0.	2.2158E-93
O-	2.2540E-40	1.5605E-23	1.3968E-19
O2	4.3997E-04	5.9653E-04	1.5868E-03
O2+	1.7597E-18	1.7523E-18	3.1720E-17
O2-	1.1712E-35	3.3350E-21	1.6801E-17
C	1.3652E-38	2.5169E-25	5.2933E-21
C+	6.1317E-50	1.0142E-38	1.4788E-32
C++	0.	4.5552E-87	1.4268E-76
C-	1.5181E-68	2.4148E-40	2.2974E-34
CO	1.0759E-07	3.1348E-04	2.2968E-03
CO+	4.0825E-30	2.6318E-24	1.1491E-21
CO2	9.9956E-01	9.9909E-01	9.9611E-01
C2	2.1912E-55	5.6661E-35	9.6205E-30

P1 = 5.00E+04 N/SQ-M, US1 = 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2169E+02	1.9027E+02
T	3.1957E+00	4.5033E+00	5.2620E+00
RHO	7.1505E+00	2.7027E+01	3.6156E+01
H	9.1903E-01	8.6219E-01	8.2786E-01
A	1.7137E+00	2.0230E+00	2.1825E+00
S	1.1225E+00	1.1458E+00	1.1698E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1904E-01	9.0877E-01	9.0517E-01
U	3.8201E+00	1.0100E+00	9.3952E-01

SPECIES	MOLE FRACTIONS		
E-	2.4699E-43	8.4893E-28	4.4168E-24
O	3.0150E-13	8.3520E-10	2.6310E-08
O+	6.9097E-35	3.3176E-30	4.7991E-28
O++	0.	0.	0.
O-	4.9717E-48	5.8860E-31	6.9493E-27
O2	4.3992E-04	4.4067E-04	4.7664E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0044E-42	1.6198E-27	6.3472E-24
C	3.2965E-45	1.0133E-30	2.4295E-27
C+	4.3160E-56	1.1541E-42	1.4978E-39
C++	0.	2.4348E-99	9.0352E-93
C-	1.5682E-81	9.2366E-53	2.9876E-46
CO	5.2674E-10	1.5083E-06	7.3506E-05
CO+	4.5733E-33	2.7967E-27	3.0292E-25
CO2	9.9956E-01	9.9956E-01	9.9945E-01
C2	3.5775E-65	1.3464E-43	9.3778E-39

P1 = 5.00E+04 N/SQ-M, US1 = 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8597E+02	4.1657E+02
T	4.6620E+00	6.9802E+00	7.9307E+00
RHO	8.8001E+00	4.0876E+01	5.2139E+01
H	8.5508E-01	7.4506E-01	6.9291E-01
A	2.0574E+00	2.4998E+00	2.6590E+00
S	1.1959E+00	1.2334E+00	1.2598E+00
Z	1.0000E+00	1.0023E+00	1.0074E+00
GAME	9.0753E-01	8.9324E-01	8.8495E-01
U	5.2490E+00	1.1313E+00	1.0642E+00

SPECIES	MOLE FRACTIONS		
E-	2.2524E-26	9.3869E-17	8.4239E-15
O	3.8646E-09	5.7607E-06	4.7551E-05
O+	5.6732E-30	1.9750E-23	3.7711E-20
O++	0.	2.4976E-88	1.1860E-79
O-	1.1258E-29	1.1767E-18	4.0876E-16
O2	4.4431E-04	2.6965E-03	7.7526E-03
O2+	1.7597E-18	2.1870E-16	2.6569E-14
O2-	1.1559E-26	1.2191E-16	1.7742E-14
C	1.9575E-29	4.4763E-20	3.9196E-17
C+	1.7402E-41	3.4451E-31	4.5749E-27
C++	0.	2.1624E-72	3.8404E-65
C-	1.9793E-50	8.1353E-33	1.2725E-28
CO	8.7986E-06	4.5208E-03	1.4679E-02
CO+	1.4618E-27	9.6983E-21	6.7606E-18
CO2	9.9955E-01	9.9278E-01	9.7752E-01
C2	7.8911E-42	8.1503E-29	1.4241E-24

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2098E+01	3.9850E+02	5.4413E+02
T	5.5110E+00	8.2405E+00	9.1495E+00
RHO	9.4504E+00	4.7846E+01	6.0258E+01
H	8.1627E-01	6.7349E-01	6.1248E-01
A	2.2314E+00	2.7100E+00	2.8642E+00
S	1.2313E+00	1.2754E+00	1.3028E+00
Z	1.0002E+00	1.0107E+00	1.0232E+00
GAME	9.0322E-01	8.8178E-01	8.7630E-01
U	5.9567E+00	1.1783E+00	1.1064E+00

SPECIES	MOLE FRACTIONS		
E-	6.4878E-22	2.9271E-14	6.1408E-13
O	1.3441E-07	9.3427E-05	3.9131E-04
O+	3.0935E-27	1.7748E-19	2.6374E-17
O++	0.	1.4984E-74	2.4423E-68
O-	7.4705E-25	1.6911E-15	8.6730E-14
O2	6.0026E-04	1.0960E-02	2.2740E-02
O2+	1.7603E-18	9.3311E-14	2.5840E-12
O2-	2.4491E-22	6.2377E-14	1.8856E-12
C	1.6613E-25	1.7817E-16	1.5382E-14
C+	6.4793E-38	5.2722E-28	3.0308E-23
C++	5.4894E-90	4.2575E-61	3.1297E-56
C-	3.5649E-43	3.1576E-28	1.2390E-24
CO	3.2097E-04	2.1144E-02	4.5011E-02
CO+	1.8510E-24	2.9774E-17	2.3800E-15
CO2	9.9908E-01	9.6780E-01	9.3186E-01
C2	1.7137E-36	4.4667E-24	4.9996E-21

P1 = 5.00E+04 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8354E+01	7.0037E+02	9.4582E+02
T	7.3024E+00	1.0434E+01	1.1269E+01
RHO	1.0665E+01	6.3510E+01	7.7369E+01
H	7.2487E-01	5.0337E-01	4.2401E-01
A	2.5459E+00	3.1027E+00	3.2696E+00
S	1.2950E+00	1.3591E+00	1.3894E+00
Z	1.0058E+00	1.0569E+00	1.0849E+00
GAME	8.8524E-01	8.7298E-01	8.7447E-01
U	7.3779E+00	1.2416E+00	1.1798E+00

SPECIES	MOLE FRACTIONS		
E-	1.3542E-15	2.0793E-11	1.1151E-10
C	3.1687E-05	2.1231E-03	4.5240E-03
O+	1.3031E-23	6.1240E-15	8.8707E-14
O++	1.0599E-82	9.2743E-60	8.3751E-56
O-	1.3530E-17	6.7105E-12	5.6667E-11
O2	6.1467E-03	5.2142E-02	7.4097E-02
O2+	2.1851E-15	1.0550E-10	6.7215E-10
O2-	7.7379E-16	7.8347E-11	5.0723E-10
C	6.3450E-19	2.0703E-12	2.3086E-11
C+	1.2233E-28	5.6017E-20	2.1587E-18
C++	1.2011E-67	6.3685E-49	1.4611E-45
C-	2.0179E-30	3.0875E-21	1.3722E-19
CC	1.1450E-02	1.0557E-01	1.5191E-01
CO+	1.2283E-15	2.8767E-13	3.1696E-12
CO2	9.8237E-01	8.4016E-01	7.6947E-01
C2	1.5744E-26	4.5818E-18	1.3634E-16

P1 = 5.00E+04 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4522E+01	5.3484E+02	7.3784E+02
T	6.4113E+00	9.3877E+00	1.0244E+01
RHO	1.0050E+01	5.5370E+01	6.8641E+01
H	7.7287E-01	5.9302E-01	5.2314E-01
A	2.3579E+00	2.9068E+00	3.0641E+00
S	1.2656E+00	1.3171E+00	1.3459E+00
Z	1.0014E+00	1.0289E+00	1.0494E+00
GAME	8.9559E-01	8.7476E-01	8.7338E-01
U	6.6645E+00	1.2117E+00	1.1419E+00

SPECIES	MOLE FRACTIONS		
E-	9.8768E-18	1.4054E-12	1.1758E-11
O	2.7369E-06	5.9302E-04	1.6145E-03
O+	7.0121E-25	9.1690E-17	2.4090E-15
O++	2.6751E-96	3.1575E-67	1.4917E-59
O-	3.7012E-20	2.3149E-13	3.4157E-12
O2	1.8375E-03	2.7940E-02	4.5853E-02
O2+	1.5681E-17	5.8766E-12	6.1101E-11
O2-	4.0102E-18	4.2467E-12	4.6066E-11
C	1.3531E-21	4.6773E-14	9.3158E-13
C+	2.5961E-34	1.7561E-22	1.0147E-20
C++	6.3150E-79	6.4146E-55	7.3506E-49
C-	2.9566E-37	7.6390E-24	4.8667E-22
CO	2.7990E-03	5.5618E-02	9.2483E-02
CO+	2.8663E-22	6.8975E-15	1.3630E-13
CO2	9.9536E-01	9.1585E-01	8.6005E-01
C2	1.9789E-31	2.3243E-20	1.2541E-18

P1 = 5.00E+04 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3623E+01	9.0083E+02	1.1966E+03
T	8.1263E+00	1.1422E+01	1.2271E+01
RHO	1.1346E+01	7.2125E+01	8.6406E+01
H	6.7224E-01	4.0443E-01	3.1462E-01
A	2.6887E+00	3.3054E+00	3.4873E+00
S	1.3318E+00	1.4015E+00	1.4337E+00
Z	1.0154E+00	1.0935E+00	1.1286E+00
GAME	8.7611E-01	8.7471E-01	8.7817E-01
U	8.0981E+00	1.2762E+00	1.2236E+00

SPECIES	MOLE FRACTIONS		
E-	6.9248E-14	1.5922E-10	6.7242E-10
O	1.5277E-04	5.4609E-03	1.0067E-02
O+	4.4899E-19	1.3723E-13	1.4817E-12
O++	7.8932E-77	1.3460E-53	5.9897E-51
O-	2.4401E-15	8.2838E-11	5.1538E-10
O2	1.5362E-02	8.0473E-02	1.0426E-01
O2+	1.2614E-13	9.3201E-10	4.4795E-09
O2-	5.4495E-14	6.9478E-10	3.3314E-09
C	3.1911E-16	3.4924E-11	2.8952E-10
C+	8.5591E-26	3.1818E-18	1.0602E-16
C++	1.0104E-62	5.3388E-44	1.3368E-41
C-	1.7245E-27	1.9813E-19	7.6178E-18
CO	3.0050E-02	1.6560E-01	2.1781E-01
CO+	4.2220E-17	4.6905E-12	3.8174E-11
CO2	9.9439E-01	7.4846E-01	6.6787E-01
C2	1.1641E-23	2.0740E-16	4.7219E-15

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 2.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1033E+02	1.1398E+03	1.4961E+03
T	8.8655E+00	1.2392E+01	1.3287E+01
RHO	1.2075E+01	8.0860E+01	9.5438E+01
H	6.1458E-01	2.9623E-01	1.9452E-01
A	2.8206E+00	3.5194E+00	3.7220E+00
S	1.3646E+00	1.4444E+00	1.4786E+00
Z	1.0309E+00	1.1376E+00	1.1797E+00
GAME	8.7C51E-01	8.7869E-01	8.8376E-01
U	8.8237E+00	1.3197E+00	1.2776E+00

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 2.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2845E+02	1.4166E+03	1.8446E+03
T	9.5352E+00	1.3370E+01	1.4345E+01
RHO	1.2807E+01	8.9187E+01	1.0390E+02
H	5.5313E-01	1.7898E-01	6.3669E-02
A	2.5508E+00	3.7478E+00	3.9769E+00
S	1.3977E+00	1.4878E+00	1.5241E+00
Z	1.0515E+00	1.1880E+00	1.2375E+00
GAME	8.6809E-01	8.8430E-01	8.9090E-01
U	9.5515E+00	1.3738E+00	1.3426E+00

SPECIES	MOLE FRACTIONS		
E-	9.4533E-13	8.5531E-10	3.0979E-09
O	7.0490E-04	1.1491E-02	1.9367E-02
O+	1.9041E-17	1.9016E-12	1.6045E-11
O++	1.2642E-68	5.0380E-49	6.8537E-47
O-	6.0064E-14	6.5482E-10	3.2752E-09
O2	2.5671E-02	1.0983E-01	1.3337E-01
O2+	1.9182E-12	5.5199E-09	2.1889E-08
O2-	9.1409E-15	4.0600E-09	1.5843E-08
C	1.1130E-14	3.7192E-10	2.4665E-09
C+	6.0515E-24	1.1540E-16	2.8802E-15
C++	3.7688E-56	3.0988E-40	2.8262E-38
C-	1.0252E-25	8.1044E-18	2.2544E-16
CO	5.9194E-02	2.3037E-01	2.8535E-01
CO+	1.2839E-15	4.8315E-11	3.1095E-10
CO2	9.1043E-01	6.4831E-01	5.6192E-01
C2	9.0886E-22	5.6360E-15	9.4657E-14

SPECIES	MOLE FRACTIONS		
E-	7.6327E-12	3.6848E-09	1.1940E-08
O	1.8761E-03	2.1201E-02	3.3723E-02
O+	5.3440E-16	1.9731E-11	1.2888E-10
O++	1.5566E-65	1.0223E-46	1.8856E-43
O-	8.3233E-13	3.8615E-09	1.6249E-08
O2	4.7908E-02	1.3744E-01	1.5857E-01
O2+	1.7014E-11	2.4989E-08	8.6089E-08
O2-	8.5726E-12	1.7829E-08	5.9969E-08
C	2.1757E-13	2.9828E-09	1.6160E-08
C+	1.2876E-21	3.7019E-15	5.1739E-14
C++	1.7687E-53	4.0626E-38	1.9506E-35
C-	4.6189E-23	2.8745E-16	4.2908E-15
CO	9.6855E-02	2.9534E-01	3.5016E-01
CO+	2.2839E-14	3.6706E-10	1.9396E-09
CO2	8.5336E-01	5.4601E-01	4.5754E-01
C2	8.0750E-20	1.1656E-13	1.2976E-12

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 3.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4796E+02	1.7296E+03	2.2418E+03
T	1.0156E+01	1.4379E+01	1.5473E+01
RHO	1.3516E+01	9.6681E+01	1.1133E+02
H	4.8665E-01	5.2884E-02	-7.8358E-02
A	3.0823E+00	3.9930E+00	4.2559E+00
S	1.4313E+00	1.5315E+00	1.5702E+00
Z	1.0779E+00	1.2441E+00	1.3014E+00
GAME	8.6790E-01	8.9126E-01	8.9948E-01
U	1.0279E+01	1.4394E+00	1.4237E+00

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 3.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6883E+02	2.0754E+03	2.6843E+03
T	1.0744E+01	1.5439E+01	1.6689E+01
RHO	1.4178E+01	1.0300E+02	1.1737E+02
H	4.1567E-01	-8.1892E-02	-2.3097E-01
A	3.2171E+00	4.2571E+00	4.5604E+00
S	1.4653E+00	1.5753E+00	1.6163E+00
Z	1.1083E+00	1.3051E+00	1.3703E+00
GAME	8.6919E-01	8.9942E-01	9.0940E-01
U	1.1005E+01	1.5173E+00	1.5128E+00

SPECIES	MOLE FRACTIONS		
E-	3.9696E-11	1.3248E-08	4.1298E-08
O	4.0447E-03	3.5681E-02	5.4654E-02
O+	6.7934E-15	1.4381E-10	8.6907E-10
O++	3.8900E-61	2.4787E-43	3.4645E-40
O-	6.4080E-12	1.7615E-08	6.8465E-08
O2	6.8647E-02	1.6089E-01	1.7727E-01
O2+	9.5071E-11	9.1165E-08	2.9105E-07
O2-	4.9188E-11	6.2535E-08	1.9239E-07
C	2.1601E-12	1.7852E-08	9.0736E-08
C+	4.3018E-20	5.9361E-14	7.5771E-13
C++	7.0977E-50	2.4971E-35	9.6313E-33
C-	1.5676E-21	4.8618E-15	6.5023E-14
CO	1.4052E-01	3.5676E-01	4.0852E-01
CO+	2.1354E-13	2.0897E-09	1.0239E-08
CO2	7.8679E-01	4.4666E-01	3.5956E-01
C2	1.9788E-18	1.4264E-12	1.4452E-11

SPECIES	MOLE FRACTIONS		
E-	1.5568E-10	4.2450E-08	1.3086E-07
C	7.5756E-03	5.6099E-02	8.3466E-02
O+	5.5160E-14	8.5961E-10	5.0202E-09
O++	7.6907E-58	1.8008E-40	3.4957E-37
O-	3.4206E-11	6.7771E-08	2.5052E-07
O2	9.0534E-02	1.7800E-01	1.8708E-01
O2+	3.9363E-10	2.8547E-07	8.6375E-07
O2-	2.0515E-10	1.8604E-07	5.3433E-07
C	1.4351E-11	8.9988E-08	4.4673E-07
C+	7.4886E-19	7.2817E-13	9.1521E-12
C++	3.8796E-47	6.7246E-33	2.9920E-30
C-	3.0360E-20	6.1502E-14	7.9364E-13
CO	1.8785E-01	4.1143E-01	4.3699E-01
CO+	1.3559E-12	9.9384E-09	4.6934E-08
CO2	7.1404E-01	3.5447E-01	2.7246E-01
C2	2.6922E-17	1.3588E-11	1.3370E-10

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9105E+02	2.4500E+03	3.1699E+03
T	1.1315E+01	1.6569E+01	1.8021E+01
RHO	1.4777E+01	1.0791E+02	1.2183E+02
H	3.4009E-01	-2.2519E-01	-3.9487E-01
A	3.358E+00	4.5421E+00	4.8942E+00
S	1.4999E+00	1.6190E+00	1.6624E+00
Z	1.1426E+00	1.3702E+00	1.4438E+00
GAME	8.7153E-01	9.0870E-01	9.2060E-01
U	1.1729E+01	1.6086E+00	1.6169E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.0583E-10	1.2554E-07	3.8911E-07
O	1.2866E-02	8.3507E-02	1.2120E-01
O+	3.3686E-13	4.4899E-09	2.5744E-08
O++	6.0140E-55	2.0542E-37	1.9443E-34
O-	1.4316E-10	2.2914E-07	8.1727E-07
O2	1.1235E-01	1.8700E-01	1.8650E-01
O2+	1.3297E-09	7.9242E-07	2.2971E-06
O2-	6.8771E-10	4.8385E-07	1.3100E-06
C	7.3504E-11	4.0358E-07	2.0159E-06
C+	8.8932E-18	7.7063E-12	9.6362E-11
C++	9.6075E-45	1.9385E-30	6.2431E-28
C-	3.8997E-19	6.5492E-13	8.2566E-12
CO	2.3679E-01	4.5687E-01	4.9359E-01
CO+	6.6283E-12	4.1609E-08	1.9346E-07
CO2	6.3799E-01	2.7262E-01	1.9870E-01
C2	2.5590E-16	1.1081E-10	1.0844E-09

P1 = 5.00E+04 N/SQ-M, US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3946E+02	3.2658E+03	4.2588E+03
T	1.2445E+01	1.9098E+01	2.1138E+01
RHO	1.5747E+01	1.1322E+02	1.2575E+02
H	1.7522E-01	-5.3679E-01	-7.5873E-01
A	3.6551E+00	5.1801E+00	5.6624E+00
S	1.5705E+00	1.7053E+00	1.7539E+00
Z	1.2219E+00	1.5104E+00	1.6022E+00
GAME	8.7851E-01	9.3026E-01	9.4670E-01
U	1.3168E+01	1.8341E+00	1.8847E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.7245E-09	9.0573E-07	2.9967E-06
O	3.0520E-02	1.6091E-01	2.2184E-01
O+	7.2902E-12	8.5537E-08	5.0357E-07
O++	2.9721E-49	2.6359E-32	4.9759E-29
O-	1.5579E-09	1.8787E-06	6.4660E-06
O2	1.3144E-01	1.7729E-01	1.5428E-01
O2+	1.0153E-08	4.4658E-06	1.1951E-05
O2-	4.9752E-09	2.3013E-06	5.5770E-06
C	1.1741E-09	6.2041E-06	3.4031E-05
C+	6.0058E-16	5.5654E-10	8.1584E-09
C++	1.2701E-40	3.6184E-26	1.9911E-23
C-	2.9014E-17	4.5119E-11	6.4204E-10
CO	3.3269E-01	5.1492E-01	5.2983E-01
CO+	9.7568E-11	5.3387E-07	2.5780E-06
CO2	4.8535E-01	1.4686E-01	9.3989E-02
C2	1.1587E-14	4.9223E-09	5.5846E-08

P1 = 5.00E+04 N/SQ-M, US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1460E+02	2.8486E+03	3.6966E+03
T	1.1879E+01	1.7784E+01	1.9496E+01
RHO	1.5302E+01	1.1132E+02	1.2461E+02
H	2.5993E-01	-3.7687E-01	-5.7089E-01
A	3.5024E+00	4.8494E+00	5.2611E+00
S	1.5350E+00	1.6624E+00	1.7084E+00
Z	1.1806E+00	1.4389E+00	1.5216E+00
GAME	8.7468E-01	9.1901E-01	9.3306E-01
U	1.2450E+01	1.7139E+00	1.7427E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4388E-09	3.4685E-07	1.1029E-06
O	2.0353E-02	1.1852E-01	1.6792E-01
O+	1.6765E-12	2.0679E-08	1.1975E-07
O++	1.0936E-51	9.5040E-35	1.2588E-31
O-	5.0307E-10	6.9048E-07	2.4123E-06
O2	1.3299E-01	1.8680E-01	1.7514E-01
O2+	3.8781E-09	1.9763E-06	5.5217E-06
O2-	1.9651E-09	1.1157E-06	2.8612E-06
C	3.1283E-10	1.6474E-06	8.5129E-06
C+	7.9005E-17	6.9594E-11	9.2955E-10
C++	9.7347E-43	3.1682E-28	1.2942E-25
C-	3.6702E-18	5.8310E-12	7.6748E-11
CO	2.8559E-01	4.9150E-01	5.1763E-01
CO+	2.7229E-11	1.5599E-07	7.3406E-07
CO2	5.6107E-01	2.0317E-01	1.3928E-01
C2	1.8680E-15	7.8060E-10	8.0718E-09

P1 = 5.00E+04 N/SQ-M, US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6563E+02	3.6958E+03	4.8526E+03
T	1.3022E+01	2.0527E+01	2.2994E+01
RHO	1.6108E+01	1.1367E+02	1.2531E+02
H	8.5955E-02	-7.0479E-01	-5.5905E-01
A	3.8158E+00	5.5355E+00	6.1016E+00
S	1.6064E+00	1.7474E+00	1.7987E+00
Z	1.2663E+00	1.5840E+00	1.6842E+00
GAME	8.8256E-01	9.4241E-01	9.6135E-01
U	1.3882E+01	1.9701E+00	2.0471E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.9849E-09	2.2576E-06	7.9481E-06
O	4.3889E-02	2.0933E-01	2.7979E-01
O+	2.8693E-11	3.2129E-07	1.9271E-06
O++	1.9160E-47	5.7122E-30	1.2129E-26
O-	4.5714E-09	4.6603E-06	1.5987E-05
O2	1.6677E-01	1.5960E-01	1.2666E-01
O2+	2.4434E-08	9.1746E-06	2.3250E-05
O2-	1.1426E-08	4.2733E-06	9.7959E-06
C	4.0165E-09	2.2011E-05	1.3163E-04
C+	4.1051E-15	4.0549E-09	6.6999E-08
C++	9.3541E-40	3.4135E-24	2.2499E-21
C-	2.0206E-16	3.1287E-10	4.9610E-09
CO	3.7673E-01	5.2796E-01	5.3241E-01
CO+	3.2035E-10	1.6916E-06	8.4921E-06
CO2	4.1261E-01	1.0307E-01	6.0941E-02
C2	6.3804E-14	2.8641E-08	3.7072E-07

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9308E+02	4.1325E+03	5.4735E+03
T	1.3616E+01	2.2095E+01	2.5131E+01
RHO	1.6385E+01	1.1278E+02	1.2344E+02
H	-7.6658E-03	-8.8070E-01	-1.1724E+00
A	3.9854E+00	5.9167E+00	6.5770E+00
S	1.6426E+00	1.7886E+00	1.8424E+00
Z	1.3137E+00	1.6583E+00	1.7644E+00
GAME	8.8759E-01	9.5540E-01	9.7555E-01
U	1.4592E+01	2.1230E+00	2.2321E+00

SPECIES	MOLE FRACTIONS		
E-	2.0514E-08	5.4389E-06	2.1181E-05
C	6.0958E-02	2.6136E-01	3.3717E-01
O+	1.0418E-10	1.1033E-06	6.7671E-06
O++	1.4881E-45	9.8711E-28	3.0020E-24
O-	1.1312E-08	1.0662E-05	3.7289E-05
O2	1.7810E-01	1.3585E-01	9.6190E-02
O2+	5.4921E-08	1.7152E-05	4.0344E-05
O2-	2.4173E-08	7.2006E-06	1.5722E-05
C	1.2778E-08	7.4822E-05	5.0871E-04
C+	2.5489E-14	2.7549E-08	5.3411E-07
C++	6.2167E-37	2.7278E-22	2.6076E-19
C-	1.2521E-15	1.9965E-09	3.8280E-08
CO	4.1653E-01	5.3243E-01	5.2815E-01
CO+	9.7375E-10	5.0201E-06	2.6585E-05
CO2	3.4437E-01	7.0243E-02	3.7829E-02
C2	3.1799E-13	1.5744E-07	2.4579E-06

P1 = 5.00E+04 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5178E+02	5.0009E+03	6.7665E+03
T	1.4879E+01	2.5808E+01	3.0314E+01
RHO	1.6693E+01	1.0762E+02	1.1751E+02
H	-2.6915E-01	-1.2555E+00	-1.6362E+00
A	4.3544E+00	6.7489E+00	7.4841E+00
S	1.7154E+00	1.8675E+00	1.9255E+00
Z	1.4163E+00	1.8005E+00	1.8996E+00
GAME	8.9972E-01	9.8019E-01	9.7270E-01
U	1.6001E+01	2.4853E+00	2.6475E+00

SPECIES	MOLE FRACTIONS		
E-	9.4031E-08	3.0756E-05	1.5041E-04
O	1.0828E-01	3.6281E-01	4.2722E-01
O+	1.1278E-09	1.0154E-05	5.6184E-05
O++	3.5576E-41	1.4822E-23	4.4990E-20
O-	6.1945E-08	4.6835E-05	1.7298E-04
O2	1.8597E-01	8.1900E-02	4.6190E-02
O2+	2.3493E-07	4.4743E-05	8.1384E-05
O2-	8.7628E-08	1.6032E-05	3.2858E-05
C	1.0949E-07	8.2281E-04	6.7569E-03
C+	7.6005E-13	1.0909E-06	2.4173E-05
C++	2.2257E-33	1.1411E-18	1.2904E-15
C-	3.5197E-14	7.2494E-08	1.9415E-06
CO	4.7960E-01	5.2459E-01	5.0544E-01
CO+	7.5407E-05	3.7707E-05	1.9645E-04
CO2	2.2615E-01	2.9682E-02	1.3581E-02
C2	6.1835E-12	4.6049E-06	9.9159E-05

P1 = 5.00E+04 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2180E+02	4.5695E+03	6.1153E+03
T	1.4233E+01	2.3840E+01	2.7612E+01
RHO	1.6579E+01	1.1070E+02	1.2052E+02
H	-1.0624E-01	-1.0643E+00	-1.3988E+00
A	4.1647E+00	6.3236E+00	7.0627E+00
S	1.6790E+00	1.8287E+00	1.8849E+00
Z	1.3637E+00	1.7315E+00	1.8377E+00
GAME	8.9359E-01	9.6874E-01	9.8306E-01
U	1.5299E+01	2.2944E+00	2.4381E+00

SPECIES	MOLE FRACTIONS		
E-	4.4781E-08	1.2901E-05	5.7501E-05
C	8.2340E-02	3.3717E-01	3.8819E-01
O+	3.5343E-10	3.4876E-06	2.1318E-05
O++	3.8193E-43	1.3583E-25	4.8050E-22
O-	2.7310E-08	2.2867E-05	8.3267E-05
O2	1.8469E-01	1.0887E-01	6.7662E-02
O2+	1.1653E-07	2.9142E-05	6.1466E-05
O2-	4.7577E-08	1.1135E-05	2.3454E-05
C	3.8349E-08	2.4880E-04	1.9535E-03
C+	1.4511E-13	1.7700E-07	3.9853E-06
C++	4.9869E-35	1.8881E-20	2.2882E-17
C-	6.6779E-15	1.2140E-08	2.9098E-07
CO	4.5107E-01	5.3060E-01	5.1925E-01
CO+	2.7812E-09	1.4109E-05	7.7743E-05
CO2	2.8190E-01	4.6404E-02	2.2602E-02
C2	1.4562E-12	8.5140E-07	1.6859E-05

P1 = 5.00E+04 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8300E+02	5.4231E+03	7.4084E+03
T	1.5560E+01	2.8018E+01	3.2837E+01
RHO	1.6730E+01	1.0397E+02	1.1553E+02
H	-3.1660E-01	-1.4541E+00	-1.8798E+00
A	4.5553E+00	7.1615E+00	7.8098E+00
S	1.7518E+00	1.9049E+00	1.9637E+00
Z	1.4713E+00	1.8617E+00	1.9529E+00
GAME	9.0643E-01	9.8325E-01	9.5115E-01
U	1.6699E+01	2.6909E+00	2.8272E+00

SPECIES	MOLE FRACTIONS		
E-	1.9075E-07	7.3826E-05	3.3158E-04
O	1.3895E-01	4.0447E-01	4.5407E-01
O+	3.4052E-09	2.6683E-05	1.1529E-04
O++	9.3914E-40	1.1220E-21	1.4462E-18
O-	1.3268E-07	9.2295E-05	3.1149E-04
O2	1.8166E-01	5.8384E-02	3.3579E-02
O2+	4.5203E-07	6.1559E-05	9.6969E-05
O2-	1.5157E-07	2.1819E-05	4.3289E-05
C	2.9958E-07	2.6627E-03	1.7614E-02
C+	3.6871E-12	6.2062E-06	9.4768E-05
C++	5.4867E-32	5.3417E-17	2.7926E-14
C-	1.6213E-13	4.2372E-07	8.7058E-06
CO	5.0168E-01	5.1552E-01	4.8411E-01
CO+	1.9554E-08	9.3915E-05	3.8804E-04
CO2	1.7771E-01	1.8569E-02	8.8518E-03
C2	2.4574E-11	2.4356E-05	3.8795E-04

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad U_1 = 5.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1545E+02	5.8378E+03	8.0292E+03
T	1.6281E+01	3.0345E+01	3.4959E+01
RHO	1.6655E+01	1.0053E+02	1.1456E+02
H	-4.2858E-01	-1.6604E+00	-2.1276E+00
A	4.7483E+00	7.5077E+00	8.0995E+00
S	1.7881E+00	1.9407E+00	2.0002E+00
Z	1.5284E+00	1.9137E+00	2.0048E+00
GAME	9.1372E-01	9.7063E-01	9.3602E-01
U	1.7353E+01	2.8928E+00	2.9671E+00

SPECIES	MOLE FRACTIONS		
E-	3.7722E-07	1.6936E-04	5.9555E-04
O	1.7411E-01	4.3607E-01	4.7407E-01
O+	1.0017E-08	6.0243E-05	1.9247E-04
O++	2.6151E-37	5.1843E-20	1.7685E-17
O-	2.7040E-07	1.7074E-04	4.8322E-04
O2	1.7189E-01	4.1228E-02	2.6891E-02
O2+	8.3453E-07	7.6139E-05	1.1035E-04
O2-	2.4648E-07	2.8386E-05	5.4131E-05
C	8.0269E-07	7.7425E-03	3.3977E-02
C+	1.8124E-11	2.8996E-05	2.4278E-04
C++	3.1214E-30	1.6432E-15	2.4567E-13
C-	7.3195E-13	2.1513E-06	2.5214E-05
CO	5.1732E-01	5.0231E-01	4.5542E-01
CO+	4.9530E-08	2.0526E-04	6.1251E-04
CO2	1.3668E-01	1.1802E-02	6.3496E-03
C2	9.6778E-11	1.1137E-04	9.7493E-04

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad U_1 = 5.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8351E+02	6.6621E+03	9.1972E+03
T	1.7877E+01	3.4410E+01	3.8365E+01
RHO	1.6428E+01	5.6420E+01	1.1327E+02
H	-6.6610E-01	-2.0977E+00	-2.6410E+00
A	5.2357E+00	8.0437E+00	8.6747E+00
S	1.8600E+00	2.0093E+00	2.0710E+00
Z	1.6477E+00	2.0080E+00	2.1165E+00
GAME	9.3061E-01	9.3641E-01	9.2675E-01
U	1.8765E+01	3.2024E+00	3.1833E+00

SPECIES	MOLE FRACTIONS		
E-	1.3765E-06	5.8340E-04	1.2194E-03
O	2.5505E-01	4.7689E-01	5.0710E-01
O+	7.8001E-08	1.7977E-04	3.9448E-04
O++	8.0421E-34	1.0541E-17	5.5790E-16
O-	9.7212E-07	4.2278E-04	8.8762E-04
O2	1.3832E-01	2.4856E-02	2.0609E-02
O2+	2.5170E-06	9.7489E-05	1.3822E-04
O2-	5.4379E-07	4.2987E-05	7.6290E-05
C	5.5474E-06	3.3130E-02	7.4676E-02
C+	4.0022E-10	2.3018E-04	7.8723E-04
C++	3.6293E-27	1.7913E-13	4.3521E-12
C-	1.2876E-11	2.1329E-05	9.6405E-05
CO	5.3115E-01	4.5626E-01	3.8626E-01
CO+	2.5702E-07	3.6306E-04	1.0598E-03
CO2	7.5471E-02	5.8552E-03	3.8036E-03
C2	1.4007E-05	8.6470E-04	2.7936E-03

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad U_1 = 5.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.4905E+02	6.2513E+03	8.6279E+03
T	1.7049E+01	3.2524E+01	3.6767E+01
RHO	1.6554E+01	9.8035E+01	1.1395E+02
H	-5.4508E-01	-1.8749E+00	-2.3815E+00
A	4.9545E+00	7.7859E+00	8.3866E+00
S	1.8242E+00	1.9754E+00	2.0359E+00
Z	1.5874E+00	1.9606E+00	2.0593E+00
GAME	5.2171E-01	9.5067E-01	9.2894E-01
U	1.8682E+01	3.0654E+00	3.0852E+00

SPECIES	MOLE FRACTIONS		
E-	7.2681E-07	3.3996E-04	9.2768E-04
O	2.1315E-01	4.5891E-01	4.9129E-01
O+	2.8267E-08	1.1260E-04	2.8519E-04
O++	1.0151E-35	1.0667E-18	1.1907E-16
O-	5.2413E-07	2.8401E-04	6.7719E-04
O2	1.5714E-01	2.0783E-02	2.3082E-02
O2+	1.4779E-06	8.7530E-05	1.2385E-04
O2-	3.7725E-07	3.5519E-05	6.5209E-05
C	2.1173E-06	1.8016E-02	5.3624E-02
C+	8.4656E-11	9.6432E-05	4.7452E-04
C++	9.3471E-29	2.4249E-14	1.2277E-12
C-	3.0558E-12	8.0182E-06	5.4216E-05
CO	5.2688E-01	4.8258E-01	4.2192E-01
CO+	1.2198E-07	3.7095E-04	8.4074E-04
CO2	1.0262E-01	8.0097E-03	4.8356E-03
C2	3.6703E-10	3.6901E-04	1.8150E-03

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad U_1 = 5.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.1987E+02	7.0610E+03	9.7354E+03
T	1.8781E+01	3.6041E+01	3.9852E+01
RHO	1.6199E+01	9.5184E+01	1.1222E+02
H	-7.5161E-01	-2.3285E+00	-2.9086E+00
A	5.4548E+00	8.3024E+00	8.9696E+00
S	1.8953E+00	2.0430E+00	2.1061E+00
Z	1.7086E+00	2.0583E+00	2.1769E+00
GAME	9.4078E-01	9.2921E-01	9.2737E-01
U	1.9444E+01	3.3143E+00	3.2799E+00

SPECIES	MOLE FRACTIONS		
E-	1.5826E-06	8.8844E-04	1.7791E-03
O	2.6847E-01	4.9274E-01	5.2217E-01
O+	2.1065E-07	2.5958E-04	5.2574E-04
O++	4.1625E-32	6.2711E-17	2.1317E-15
O-	1.7359E-06	5.7890E-04	1.1157E-03
O2	1.1657E-01	2.1313E-02	1.8815E-02
O2+	4.1266E-06	1.0750E-04	1.5383E-04
O2-	7.3578E-07	5.0613E-05	8.7263E-05
C	1.4613E-05	5.1342E-02	9.6410E-02
C+	1.8876E-05	4.3615E-04	1.1870E-03
C++	1.1249E-25	8.1669E-13	1.2678E-11
C-	5.2612E-11	4.4120E-05	1.5257E-04
CO	5.3168E-01	4.2541E-01	3.4949E-01
CO+	7.1538E-07	7.5885E-04	1.2680E-03
CO2	5.3848E-02	4.5058E-03	3.0249E-03
C2	5.3974E-05	1.5689E-03	3.8166E-03

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+C4 N/SQ-M, US1= 5.80E+C3 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.5651E+02	7.4355E+03	1.0231E+04
T	1.9792E+01	3.7496E+01	4.1277E+01
RHO	1.5503E+01	9.3904E+01	1.1085E+02
H	-9.2159E-01	-2.5667E+00	-3.1841E+00
A	5.7761E+00	8.5654E+00	9.2721E+00
S	1.9300E+00	2.0766E+00	2.1415E+00
Z	1.7654E+00	2.1117E+00	2.2401E+00
GAME	9.5272E-01	9.2655E-01	9.2980E-01
U	2.0112E+01	3.4117E+00	3.3756E+00

SPECIES	MOLE FRACTIONS		
E-	4.8831E-06	1.2500E-03	2.3165E-03
O	3.4179E-01	5.0757E-01	5.3658E-01
O+	5.6723E-07	3.5302E-04	6.8438E-04
O++	2.5255E-30	2.7224E-16	7.1105E-15
C-	3.0177E-06	7.4838E-04	1.3601E-03
O2	9.2281E-02	1.8970E-02	1.7365E-02
O2+	6.5170E-06	1.1809E-04	1.7064E-04
O2-	9.5217E-07	5.8197E-05	9.7776E-05
C	3.9822E-05	7.1182E-02	1.1820E-01
C+	9.4063E-09	7.1451E-04	1.6802E-03
C++	4.0876E-24	2.7537E-12	3.2429E-11
C-	2.2184E-10	7.7185E-05	2.2263E-04
CC	5.2779E-01	3.9204E-01	3.1266E-01
CO+	1.7595E-06	9.4811E-04	1.4619E-03
CO2	3.7077E-02	3.5656E-03	2.4067E-03
C2	2.2040E-08	2.4023E-03	4.7913E-03

P1 = 5.00E+04 N/SQ-M, US1= 6.20E+03 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3394E+02	8.0567E+03	1.1039E+04
T	2.2338E+01	4.0094E+01	4.4063E+01
RHO	1.5089E+01	9.0224E+01	1.0555E+02
H	-1.1948E+00	-3.0625E+00	-3.7579E+00
A	6.4253E+00	9.1049E+00	9.9060E+00
S	1.9568E+00	2.1443E+00	2.2131E+00
Z	1.8805E+00	2.2272E+00	2.3735E+00
GAME	9.8264E-01	9.2837E-01	9.3828E-01
U	2.1421E+01	3.5883E+00	3.5754E+00

SPECIES	MOLE FRACTIONS		
E-	1.9055E-05	2.1543E-03	3.6991E-03
O	4.1952E-01	5.3540E-01	5.6327E-01
O+	4.2131E-06	5.9194E-04	1.1155E-03
O++	1.4011E-26	2.9824E-15	6.2399E-14
O-	9.0708E-06	1.1184E-03	1.8936E-03
O2	4.8586E-02	1.5851E-02	1.4877E-02
O2+	1.4116E-05	1.4101E-04	2.0711E-04
O2-	1.3750E-06	7.2172E-05	1.1567E-04
C	3.6670E-04	1.1241E-01	1.6063E-01
C+	3.0661E-07	1.4956E-03	2.9954E-03
C++	9.0120E-21	1.8667E-11	1.6827E-10
C-	5.2018E-05	1.7403E-04	4.0278E-04
CC	1.1593E-01	3.2288E-01	2.4120E-01
CO+	1.1674E-05	1.2904E-03	1.7931E-03
CO2	1.5135E-02	2.2927E-03	1.4794E-03
C2	5.1538E-07	4.1258E-03	6.3136E-03

P1 = 5.00E+C4 N/SQ-M, US1= 6.00E+03 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9497E+02	7.7718E+03	1.0673E+04
T	2.0955E+01	3.8834E+01	4.2677E+01
RHO	1.5534E+01	9.2303E+01	1.0845E+02
H	-1.0500E+00	-2.8116E+00	-3.4684E+00
A	6.0855E+00	8.8328E+00	9.5850E+00
S	1.9639E+00	2.1103E+00	2.1773E+00
Z	1.8277E+00	2.1682E+00	2.3060E+00
GAME	9.6691E-01	9.2659E-01	9.3354E-01
U	2.0772E+01	3.5018E+00	3.4798E+00

SPECIES	MOLE FRACTIONS		
E-	9.5422E-06	1.6697E-03	2.9512E-03
O	3.8307E-01	5.2176E-01	5.5035E-01
O+	1.5384E-06	4.6267E-04	8.7862E-04
O++	1.8588E-28	5.6501E-16	2.1808E-14
O-	5.1957E-06	9.2890E-04	1.6211E-03
O2	7.0007E-02	1.7246E-02	1.6081E-02
O2+	5.8592E-06	1.2931E-04	1.8856E-04
O2-	1.1679E-06	6.5483E-05	1.0745E-04
C	1.1558E-04	9.1726E-02	1.3978E-01
C+	5.1081E-08	1.0664E-03	2.2804E-03
C++	1.8248E-22	7.6508E-12	7.6353E-11
C-	1.0115E-09	1.2061E-04	3.0664E-04
CC	5.2240E-01	3.5756E-01	2.7627E-01
CO+	4.4622E-06	1.1263E-03	1.6389E-03
CO2	2.4379E-02	2.8563E-03	1.8986E-03
C2	9.9607E-08	3.2797E-03	5.6466E-03

P1 = 5.00E+C4 N/SQ-M, US1= 6.40E+03 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7377E+02	8.2897E+03	1.1334E+04
T	2.3995E+01	4.1308E+01	4.5470E+01
RHO	1.4564E+01	8.7695E+01	1.0205E+02
H	-1.3380E+00	-3.3190E+00	-4.0543E+00
A	6.7749E+00	9.3830E+00	1.0239E+01
S	2.0284E+00	2.1785E+00	2.2492E+00
Z	1.9254E+00	2.2884E+00	2.4426E+00
GAME	9.9351E-01	9.3136E-01	9.4385E-01
U	2.2058E+01	3.6743E+00	3.6744E+00

SPECIES	MOLE FRACTIONS		
E-	4.5055E-05	2.7148E-03	4.5951E-03
O	4.4961E-01	5.4843E-01	5.7530E-01
O+	1.1276E-05	7.4540E-04	1.4091E-03
O++	1.2916E-24	8.3908E-15	1.7190E-13
O-	1.6339E-05	1.3160E-03	2.1788E-03
O2	3.1159E-02	1.4640E-02	1.3701E-02
O2+	1.8648E-05	1.5313E-04	2.2635E-04
O2-	1.5992E-06	7.8074E-05	1.2222E-04
C	1.2762E-03	1.3287E-01	1.8066E-01
C+	2.0162E-06	2.0086E-03	3.8486E-03
C++	5.5555E-19	4.1655E-11	3.5644E-10
C-	3.1129E-08	2.3692E-04	5.1066E-04
CC	5.0894E-01	2.8865E-01	2.0763E-01
CO+	3.0984E-05	1.4386E-03	1.9228E-03
CO2	8.8852E-03	1.8322E-03	1.1318E-03
C2	3.0855E-06	4.8816E-03	6.7586E-03

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 6.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1470E+02	8.5169E+03	1.1627E+04
T	2.5843E+01	4.2524E+01	4.6955E+01
RHO	1.4107E+01	8.5180E+01	9.8548E+01
H	-1.4856E+00	-3.5823E+00	-4.3601E+00
A	7.0617E+00	9.6707E+00	1.0588E+01
S	2.0585E+00	2.2127E+00	2.2853E+00
Z	1.9604E+00	2.3513E+00	2.5127E+00
GAME	9.8433E-01	9.3534E-01	9.5012E-01
U	2.2691E+01	3.7640E+00	3.7803E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0571E-04	3.3681E-03	5.6867E-03
C	4.7048E-01	5.6077E-01	5.8627E-01
O+	2.7631E-05	9.3101E-04	1.7823E-03
O++	8.6323E-23	2.2453E-14	4.7288E-13
O-	2.5646E-05	1.5262E-03	2.4853E-03
O2	1.9472E-02	1.3566E-02	1.2560E-02
O2+	2.2250E-05	1.6626E-04	2.4734E-04
O2-	1.8629E-06	8.3570E-05	1.2768E-04
C	4.3319E-03	1.5288E-01	1.9966E-01
C+	1.1981E-05	2.6179E-03	4.8722E-03
C++	2.4454E-17	8.8071E-11	7.4456E-10
C-	1.8680E-07	3.0980E-04	6.3155E-04
CC	5.0024E-01	2.5524E-01	1.7583E-01
CO+	7.5543E-05	1.5725E-03	2.0294E-03
CO2	5.1891E-03	1.4542E-03	8.4761E-04
C2	1.8000E-05	5.5145E-03	6.9711E-03

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0175E+02	9.2538E+03	1.2648E+04
T	2.9024E+01	4.5210E+01	5.0536E+01
RHO	1.3653E+01	8.2495E+01	9.4288E+01
H	-1.7550E+00	-4.117E+00	-5.0250E+00
A	7.4194E+00	1.0301E+01	1.1270E+01
S	2.1153E+00	2.2793E+00	2.3565E+00
Z	2.0236E+00	2.4812E+00	2.6544E+00
GAME	9.3725E-01	9.4594E-01	9.6376E-01
U	2.4004E+01	3.9789E+00	4.0638E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.9355E-04	5.0678E-03	8.8077E-03
O	4.9564E-01	5.8286E-01	6.0425E-01
O+	8.6850E-05	1.4602E-03	2.9613E-03
O++	2.7313E-20	1.6480E-13	4.2473E-12
O-	7.5773E-05	2.0330E-03	3.2480E-03
O2	1.0049E-02	1.1795E-02	1.0447E-02
O2+	2.5883E-05	2.0086E-04	3.0418E-04
O2-	2.5854E-06	9.6618E-05	1.3990E-04
C	2.3322E-02	1.9077E-01	2.3373E-01
C+	1.2824E-04	4.2170E-03	7.6726E-03
C++	4.9385E-15	3.7956E-10	3.5038E-09
C-	2.5071E-06	4.9659E-04	9.3282E-04
CC	4.6751E-01	1.5193E-01	1.1815E-01
CO+	2.3324E-04	1.8159E-03	2.1904E-03
CO2	2.3542E-03	8.9174E-04	4.3800E-04
C2	2.0274E-04	6.3721E-03	6.7211E-03

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5727E+02	8.8274E+03	1.2053E+04
T	2.7581E+01	4.3810E+01	4.8631E+01
RHO	1.3790E+01	8.3409E+01	9.5913E+01
H	-1.6379E+00	-3.8560E+00	-4.6844E+00
A	7.2540E+00	9.9753E+00	1.0966E+01
S	2.0873E+00	2.2463E+00	2.3214E+00
Z	1.9910E+00	2.4157E+00	2.5840E+00
GAME	9.5822E-01	9.4022E-01	9.5697E-01
U	2.3337E+01	3.8643E+00	3.9184E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.2256E-04	4.1406E-03	7.0643E-03
O	4.8453E-01	5.7228E-01	5.9606E-01
O+	5.4230E-05	1.1631E-03	2.2831E-03
O++	2.4554E-21	6.0034E-14	1.3780E-12
O-	5.0064E-05	1.7620E-03	2.8393E-03
O2	1.3163E-02	1.2631E-02	1.1476E-02
O2+	2.4430E-05	1.8187E-04	2.7292E-04
O2-	2.1954E-06	8.9639E-05	1.3355E-04
C	1.1640E-02	1.7225E-01	2.1757E-01
C+	4.8615E-05	3.3450E-03	6.1334E-03
C++	5.6637E-16	1.8275E-10	1.5951E-09
C-	8.3616E-07	3.9548E-04	7.7213E-04
CO	4.8674E-01	2.2291E-01	1.4569E-01
CO+	1.4838E-04	1.6979E-03	2.1198E-03
CO2	3.3023E-03	1.1453E-03	6.1775E-04
C2	7.4887E-05	6.0172E-03	6.9607E-03

 $P_1 = 5.00E+04 \text{ N/SQ-M}, \quad US_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.4809E+02	9.7678E+03	1.3380E+04
T	3.0203E+01	4.0736E+01	5.2698E+01
RHO	1.3633E+01	8.2055E+01	9.3245E+01
H	-1.5570E+00	-4.4386E+00	-5.3831E+00
A	7.5886E+00	1.0647E+01	1.1795E+01
S	2.1427E+00	2.3117E+00	2.3912E+00
Z	2.0557E+00	2.5470E+00	2.7229E+00
GAME	9.2566E-01	9.5234E-01	9.6952E-01
U	2.4687E+01	4.1078E+00	4.2263E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.0570E-04	6.1935E-03	1.1044E-02
O	5.0591E+01	5.9240E-01	6.1059E-01
O+	1.2256E-04	1.8440E-03	3.8902E-03
O++	1.6337E-15	4.6224E-13	1.3876E-11
O-	1.0510E-04	2.3399E-03	3.7101E-03
O2	8.3262E-03	1.1008E-02	9.4342E-03
O2+	2.7236E-05	2.2324E-04	3.4122E-04
O2-	3.0294E-06	1.0400E-04	1.4574E-04
C	3.7876E-02	2.0818E-01	2.4775E-01
C+	2.5255E-04	5.2620E-03	9.5463E-03
C++	2.3568E-14	7.9044E-10	7.9036E-09
C-	5.5757E-06	6.1365E-04	1.1108E-03
CC	4.4423E-01	1.6269E-01	9.3645E-02
CO+	3.1707E-04	1.9218E-03	2.2329E-03
CO2	1.8174E-03	6.8201E-04	3.0005E-04
C2	4.0260E-04	6.5480E-03	6.2535E-03

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.9602E+02	1.0339E+04	1.4206E+04
T	3.1218E+01	4.8359E+01	5.5116E+01
RHO	1.3674E+01	8.1766E+01	9.2463E+01
H	-2.1236E+00	-4.7453E+00	-5.7568E+00
A	7.7638E+00	1.1012E+01	1.2227E+01
S	2.1700E+00	2.3437E+00	2.4253E+00
Z	2.0996E+00	2.6125E+00	2.7877E+00
GAME	9.1989E-01	9.5900E-01	9.7300E-01
U	2.5375E+01	4.2505E+00	4.4030E+00

P1 = 5.00E+04 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4544E+02	1.0948E+04	1.5100E+04
T	3.2126E+01	5.0198E+01	5.7764E+01
RHO	1.3746E+01	8.1499E+01	9.1812E+01
H	-2.2949E+00	-5.0610E+00	-6.1446E+00
A	7.9431E+00	1.1388E+01	1.2651E+01
S	2.1971E+00	2.3749E+00	2.4588E+00
Z	2.1409E+00	2.6760E+00	2.8472E+00
GAME	9.1731E-01	9.6543E-01	9.7319E-01
U	2.6076E+01	4.4066E+00	4.5893E+00

SPECIES	MOLE FRACTIONS		
E-	8.5245E-04	7.5756E-03	1.3899E-02
O	5.1566E-01	6.0074E-01	6.1480E-01
O+	1.6113E-04	2.3433E-03	5.1545E-03
O++	6.7409E-19	1.3297E-12	4.6835E-11
U-	1.3749E-04	2.6816E-03	4.2122E-03
O2	7.3028E-03	1.0216E-02	8.4340E-03
O2+	2.8723E-05	2.4884E-04	3.8339E-04
O2-	3.5068E-06	1.1114E-04	1.4999E-04
C	5.4017E-02	2.2419E-01	2.5915E-01
C+	4.1787E-04	6.5125E-03	1.1782E-02
C++	7.8662E-14	1.6562E-09	1.8050E-08
C-	1.0274E-05	7.4579E-04	1.2975E-03
CO	4.1859E-01	1.3559E-01	7.2711E-02
CO+	3.9595E-04	2.0095E-03	2.2396E-03
CO2	1.4702E-03	5.0942E-04	1.9865E-04
C2	6.5507E-04	6.5221E-03	5.5944E-03

SPECIES	MOLE FRACTIONS		
E-	1.1315E-03	9.2690E-03	1.7478E-02
C	5.2590E-01	6.0765E-01	6.1665E-01
O+	2.0334E-04	2.9905E-03	6.8433E-03
O++	2.2236E-18	3.8740E-12	1.5888E-10
O-	1.7290E-04	3.0530E-03	4.7335E-03
O2	6.8216E-03	9.4157E-03	7.4690E-03
O2+	3.0407E-05	2.7741E-04	4.2961E-04
O2-	4.0178E-06	1.1747E-04	1.5194E-04
C	7.0968E-02	2.3836E-01	2.6760E-01
C+	6.2162E-04	7.9879E-03	1.4362E-02
C++	2.1083E-13	3.4693E-09	4.0996E-08
C-	1.6743E-05	8.8983E-04	1.4798E-03
CO	3.9168E-01	1.1125E-01	5.5641E-02
CO+	4.6574E-04	2.0735E-03	2.2078E-03
CO2	1.2214E-03	3.7147E-04	1.2801E-04
C2	9.5390E-04	6.2939E-03	4.8199E-03

P1 = 5.00E+04 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.5626E+02	1.1582E+04	1.6043E+04
T	3.2964E+01	5.2193E+01	6.0593E+01
RHO	1.3830E+01	8.1037E+01	9.1273E+01
H	-2.4705E+00	-5.3853E+00	-6.5446E+00
A	8.1259E+00	1.1780E+01	1.3058E+01
S	2.2243E+00	2.4063E+00	2.4915E+00
Z	2.1850E+00	2.7383E+00	2.9008E+00
GAME	9.1661E-01	9.7097E-01	9.7012E-01
U	2.6775E+01	4.5759E+00	4.7790E+00

P1 = 5.00E+04 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0485E+03	1.2233E+04	1.7022E+04
T	3.3770E+01	5.4348E+01	6.3535E+01
RHO	1.3916E+01	8.0492E+01	9.0862E+01
H	-2.6514E+00	-5.7176E+00	-6.9554E+00
A	8.3125E+00	1.2170E+01	1.3445E+01
S	2.2515E+00	2.4370E+00	2.5235E+00
Z	2.2316E+00	2.7965E+00	2.9486E+00
GAME	9.1712E-01	9.7451E-01	9.6488E-01
U	2.7474E+01	4.7585E+00	4.9669E+00

SPECIES	MOLE FRACTIONS		
E-	1.4426E-03	1.1418E-02	2.1820E-02
O	5.3574E-01	6.1310E-01	6.1615E-01
O+	2.5029E-04	3.8571E-03	9.0284E-03
O++	6.3923E-18	1.1737E-11	5.2352E-10
O-	2.1145E-04	3.4582E-03	5.2465E-03
O2	6.1274E-03	8.5753E-03	6.5720E-03
O2+	3.2305E-05	3.0940E-04	4.7825E-04
O2-	4.5598E-06	1.2241E-04	1.5139E-04
C	8.8269E-02	2.5079E-01	2.7312E-01
C+	8.6327E-04	9.7682E-03	1.7213E-02
C++	4.9245E-13	7.4075E-09	9.0583E-08
C-	2.5118E-05	1.0456E-03	1.6433E-03
CO	3.6419E-01	8.9314E-02	4.2330E-02
CO+	5.3883E-04	2.1092E-03	2.1411E-03
CO2	1.0295E-03	2.6115E-04	8.1350E-05
C2	1.2701E-03	5.8672E-03	4.0225E-03

SPECIES	MOLE FRACTIONS		
E-	1.7915E-03	1.4062E-02	2.6888E-02
O	5.4543E-01	6.1672E-01	6.1348E-01
C+	3.0322E-04	4.9854E-03	1.1747E-02
O++	1.6647E-17	3.5645E-11	1.6226E-09
O-	2.5335E-04	3.8813E-03	5.7241E-03
O2	5.7459E-03	7.7402E-03	5.7672E-03
O2+	3.4423E-05	3.4405E-04	5.2736E-04
O2-	5.1300E-06	1.2564E-04	1.4855E-04
C	1.0564E-01	2.6081E-01	2.7605E-01
C+	1.1441E-03	1.1829E-02	2.0215E-02
C++	1.0453E-12	1.5731E-08	1.9098E-07
C-	3.5526E-05	1.2036E-03	1.7763E-03
CO	3.3654E-01	7.0712E-02	3.2292E-02
CO+	6.0375E-04	2.1138E-03	2.0471E-03
CO2	8.7453E-04	1.7909E-04	5.1714E-05
C2	1.5954E-03	5.2946E-03	3.2793E-03

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1020E+03	1.2901E+04	1.8024E+04
T	3.4548E+01	5.6663E+01	6.6518E+01
RHO	1.3998E+01	7.9887E+01	9.0580E+01
H	-2.8365E+00	-6.0582E+00	-7.3742E+00
A	8.5033E+00	1.2550E+01	1.3813E+01
S	2.2787E+00	2.4670E+00	2.5545E+00
Z	2.2787E+00	2.8500E+00	2.9914E+00
GAME	9.1850E-01	9.7534E-01	9.5893E-01
U	2.8174E+01	4.9438E+00	5.1433E+00

SPECIES	MOLE FRACTIONS		
E-	2.1796E-03	1.7288E-02	3.2572E-02
O	5.5493E-01	6.1843E-01	6.0901E-01
O+	3.6362E-04	6.4431E-03	1.4987E-02
O++	4.0821E-17	1.0766E-10	4.6275E-09
O-	2.9885E-04	4.3120E-03	6.1438E-03
O2	5.4326E-03	6.9292E-03	5.0640E-03
O2+	3.6766E-05	3.8101E-04	5.7481E-04
O2-	5.7254E-06	1.2697E-04	1.4386E-04
C	1.2290E-01	2.6834E-01	2.7692E-01
C+	1.4670E-03	1.4171E-02	2.3234E-02
C++	2.0831E-12	3.3066E-08	3.7923E-07
C-	4.8057E-05	1.3565E-03	1.8720E-03
CO	3.0901E-01	5.5378E-02	2.4872E-02
CO+	6.6487E-04	2.0879E-03	1.9353E-03
CO2	7.4452E-04	1.2024E-04	3.3288E-05
C2	1.9106E-03	4.6346E-03	2.6356E-03

P1 = 5.00E+04 N/SQ-M, US1= 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2129E+03	1.4262E+04	2.0082E+04
T	3.6087E+01	6.1669E+01	7.2515E+01
RHO	1.4134E+01	7.8591E+01	9.0281E+01
H	-3.2203E+00	-6.7632E+00	-8.2412E+00
A	8.9010E+00	1.3262E+01	1.4526E+01
S	2.3335E+00	2.5253E+00	2.6147E+00
Z	2.3781E+00	2.9427E+00	3.0675E+00
GAME	9.2322E-01	9.6925E-01	9.4862E-01
U	2.9570E+01	5.3255E+00	5.4878E+00

SPECIES	MOLE FRACTIONS		
E-	3.1020E-03	2.5640E-02	4.5482E-02
O	5.7318E-01	6.1623E-01	5.9586E-01
O+	5.1450E-04	1.0571E-02	2.2987E-02
O++	2.1826E-16	8.994E-10	2.9458E-08
O-	4.0175E-04	5.1332E-03	6.7731E-03
O2	4.9177E-03	5.4615E-03	3.9183E-03
O2+	4.2170E-05	4.5837E-04	6.5911E-04
O2-	6.9736E-06	1.2401E-04	1.3050E-04
C	1.5656E-01	2.7637E-01	2.7463E-01
C+	2.2581E-03	1.9523E-02	2.9006E-02
C++	7.3139E-12	1.3553E-07	1.2601E-06
C-	8.0279E-05	1.6131E-03	1.9545E-03
CO	2.5514E-01	3.3561E-02	1.5233E-02
CO+	7.7615E-04	1.9581E-03	1.6860E-03
CO2	5.3591E-04	5.2508E-05	1.4458E-05
C2	2.4837E-03	3.2963E-03	1.6639E-03

P1 = 5.00E+C4 N/SQ-M, US1= 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1568E+03	1.3577E+04	1.9049E+04
T	3.5317E+01	5.9117E+01	6.9528E+01
RHO	1.4072E+01	7.9232E+01	9.0397E+01
H	-3.0261E+00	-6.4067E+00	-7.8042E+00
A	8.6952E+00	1.2915E+01	1.4173E+01
S	2.3061E+00	2.4964E+00	2.5850E+00
Z	2.3277E+00	2.8987E+00	3.0308E+00
GAME	9.2056E-01	9.7338E-01	9.5331E-01
U	2.8873E+01	5.1352E+00	5.3221E+00

SPECIES	MOLE FRACTIONS		
E-	2.6137E-03	2.1150E-02	3.8818E-02
O	5.6419E-01	6.1823E-01	6.0302E-01
O+	4.3328E-04	8.2922E-03	1.8756E-02
O++	9.5561E-17	3.1828E-10	1.2184E-08
O-	3.4821E-04	4.7350E-03	6.4964E-03
O2	5.1624E-03	6.1625E-03	4.4500E-03
O2+	3.9344E-05	4.1948E-04	6.1929E-04
O2-	6.3417E-06	1.2635E-04	8.13770E-04
C	1.3991E-01	2.7346E-01	2.7630E-01
C+	1.8363E-03	1.6762E-02	2.6194E-02
C++	3.9621E-12	6.8100E-08	7.1178E-07
C-	6.2567E-05	1.4957E-03	1.9306E-03
CC	2.8183E-01	4.3104E-02	1.9346E-02
CO+	7.2233E-04	2.0341E-03	1.8127E-03
CO2	6.3309E-04	7.9592E-05	2.1731E-05
C2	2.2108E-03	3.9495E-03	2.0978E-03

P1 = 5.00E+C4 N/SQ-M, US1= 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2702E+03	1.4954E+C4	2.1121E+04
T	3.6868E+01	6.4279E+01	7.5481E+01
RHO	1.4182E+01	7.7996E+01	9.0185E+01
H	-3.4150E+00	-7.1278E+00	-8.6864E+00
A	9.1096E+00	1.3595E+01	1.4877E+01
S	2.3610E+00	2.5537E+00	2.6438E+00
Z	2.4295E+00	2.9827E+00	3.1027E+00
GAME	9.2645E-01	9.6400E-01	9.4503E-01
U	3.0266E+01	5.5103E+00	5.6467E+00

SPECIES	MOLE FRACTIONS		
E-	3.6545E-03	3.0711E-02	5.2514E-02
O	5.8183E-01	6.1264E-01	5.8774E-01
O+	6.1014E-04	1.3295E-02	2.7655E-02
O++	4.8896E-16	2.4011E-09	6.6121E-08
O-	4.5982E-04	5.4922E-03	6.9742E-03
O2	4.6876E-03	4.8350E-03	3.4533E-03
O2+	4.5261E-05	4.9652E-04	6.9337E-04
O2-	7.6146E-06	1.2026E-04	1.2252E-04
C	1.7277E-01	2.7746E-01	2.7224E-01
C+	2.7406E-03	2.2369E-02	3.1648E-02
C++	1.3207E-11	2.5845E-07	2.1218E-06
C-	1.0019E-04	1.7037E-03	1.9486E-03
CO	2.2909E-01	2.6267E-02	1.2115E-02
CO+	8.2617E-04	1.8662E-03	1.5588E-03
CO2	4.5043E-04	3.4816E-05	9.7762E-06
C2	2.7206E-03	2.7110E-03	1.3175E-03

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1 = 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3289E+03	1.5647E+04	2.2159E+04
T	3.7672E+01	6.6911E+01	7.8385E+01
RHO	1.4213E+01	7.7446E+01	9.0135E+01
H	-3.4223E+00	-7.5004E+00	-9.1403E+00
A	9.3263E+00	1.3917E+01	1.5222E+01
S	2.3885E+00	2.5816E+00	2.6720E+00
Z	2.4819E+00	3.0196E+00	3.1363E+00
GAME	9.3028E-01	9.5859E-01	9.4256E-01
U	3.0959E+01	5.6898E+00	5.8019E+00

SPECIES	MOLE FRACTIONS		
E-	4.2854E-03	3.6294E-02	5.9739E-02
O	5.5012E-01	6.0769E-01	5.7897E-01
O+	7.2413E-04	1.6462E-02	3.2641E-02
O++	1.0921E-15	5.9957E-09	1.3757E-07
H-	5.2284E-04	5.8016E-03	7.1027E-03
O2	4.4635E-03	4.2820E-03	3.0511E-03
O2+	4.8644E-05	5.5278E-04	7.2132E-04
O2-	1.2562E-06	1.1542E-04	1.1424E-04
C	1.8845E-01	2.7712E-01	2.6942E-01
C+	3.2945E-03	2.5216E-02	3.4069E-02
C++	2.3590E-11	4.7025E-07	3.3975E-06
C-	1.2286E-04	1.7656E-03	1.9195E-03
CO	2.0380E-01	2.0723E-02	9.7523E-03
CO+	8.7213E-04	1.7640E-03	1.4362E-03
CO2	3.7480E-04	2.3331E-05	6.7470E-06
C2	2.9132E-03	2.2087E-03	1.0470E-03

P1 = 5.00E+04 N/SQ-M, US1 = 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4496E+03	1.7026E+04	2.4203E+04
T	3.5387E+01	7.2158E+01	8.4279E+01
RHO	1.4217E+01	7.6430E+01	8.9612E+01
H	-4.0423E+00	-8.2688E+00	-1.0072E+01
A	9.7892E+00	1.4544E+01	1.5938E+01
S	2.4436E+00	2.6361E+00	2.7286E+00
Z	2.5886E+00	3.0872E+00	3.2047E+00
GAME	9.3991E-01	9.4952E-01	9.4051E-01
U	3.2336E+01	6.0261E+00	6.0973E+00

SPECIES	MOLE FRACTIONS		
E-	5.8612E-03	4.8709E-02	7.5424E-02
O	6.0537E-01	5.9459E-01	5.5902E-01
O+	1.0299E-03	2.4048E-02	4.3946E-02
O++	5.5327E-15	3.0627E-08	5.2308E-07
H-	6.6578E-04	6.2513E-03	7.1471E-03
O2	4.0102E-03	3.3689E-03	2.3534E-03
O2+	5.6419E-05	5.9583E-04	7.5668E-04
O2-	9.4980E-06	1.0353E-04	9.6043E-05
C	2.1785E-01	2.7359E-01	2.6268E-01
C+	4.6774E-03	3.0679E-02	3.8554E-02
C++	7.4686E-11	1.3569E-06	8.0144E-06
C-	1.7724E-04	1.8088E-03	1.8027E-03
CO	1.5596E-01	1.3254E-02	6.3573E-03
CO+	9.5007E-04	1.5469E-03	1.1968E-03
CO2	2.4889E-04	1.0906E-05	3.2453E-06
C2	3.1378E-03	1.4460E-03	6.5355E-04

P1 = 5.00E+04 N/SQ-M, US1 = 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3886E+03	1.6340E+04	2.3188E+04
T	3.8507E+01	6.9544E+01	8.1357E+01
RHO	1.4225E+01	7.6932E+01	8.9887E+01
H	-3.8300E+00	-7.8808E+00	-9.6018E+00
A	9.5523E+00	1.4232E+01	1.5581E+01
S	2.4161E+00	2.6091E+00	2.7007E+00
Z	2.5350E+00	3.0541E+00	3.1708E+00
GAME	9.3474E-01	9.5366E-01	9.4106E-01
U	3.1645E+01	5.8607E+00	5.9500E+00

SPECIES	MOLE FRACTIONS		
E-	5.0128E-03	4.2319E-02	6.7510E-02
O	5.5799E-01	6.0161E-01	5.6922E-01
O+	8.6164E-04	2.0057E-02	3.8166E-02
O++	2.4444E-15	1.4004E-08	2.7635E-07
H-	5.5131E-04	6.0556E-03	7.1578E-03
O2	4.2393E-03	3.7960E-03	2.6790E-03
O2+	5.2350E-05	5.6618E-04	7.4257E-04
O2-	8.8883E-06	1.0976E-04	1.0511E-04
C	2.0351E-01	2.7573E-01	2.6615E-01
C+	3.9359E-03	2.8003E-02	3.6409E-02
C++	4.1929E-11	8.1684E-07	5.3187E-06
C-	1.4848E-04	1.7998E-03	1.8681E-03
CO	1.7538E-01	1.6497E-02	7.8403E-03
CO+	9.1362E-04	1.6564E-03	1.3128E-03
CO2	3.0789E-04	1.5839E-05	4.6443E-06
C2	3.0544E-03	1.7894E-03	8.2537E-04

P1 = 5.00E+04 N/SQ-M, US1 = 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5116E+03	1.7701E+04	2.5196E+04
T	4.0324E+01	7.4764E+01	8.7199E+01
RHO	1.4187E+01	7.5897E+01	8.9210E+01
H	-4.2590E+00	-8.6645E+00	-1.0551E+01
A	1.0039E+01	1.4856E+01	1.6301E+01
S	2.4711E+00	2.6629E+00	2.7562E+00
Z	2.6424E+00	3.1194E+00	3.2389E+00
GAME	9.4585E-01	9.4626E-01	9.4082E-01
U	3.3018E+01	6.1811E+00	6.2435E+00

SPECIES	MOLE FRACTIONS		
E-	6.8643E-03	5.5465E-02	8.3597E-02
O	6.1218E-01	5.8673E-01	5.4829E-01
O+	1.2390E-03	2.8440E-02	5.0038E-02
O++	1.2819E-14	6.3402E-08	9.4921E-07
H-	7.4691E-04	6.3893E-03	7.0738E-03
O2	3.7725E-03	2.9888E-03	2.0612E-03
O2+	6.0505E-05	6.2121E-04	7.6357E-04
O2-	1.0070E-05	9.6829E-05	8.6938E-05
C	2.3136E-01	2.7090E-01	2.5900E-01
C+	5.5499E-03	3.3244E-02	4.0570E-02
C++	1.3438E-10	2.1722E-06	1.1764E-05
C-	2.0931E-04	1.7958E-03	1.7255E-03
CO	1.3367E-01	1.0719E-02	5.1714E-03
CO+	9.8080E-04	1.4372E-03	1.0867E-03
CO2	1.9726E-04	7.5869E-06	2.2810E-06
C2	3.1579E-03	1.1655E-03	5.1766E-04

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5748E+03	1.8367E+04	2.6173E+04
T	4.1320E+01	7.7345E+01	9.0127E+01
RHO	1.4141E+01	7.5359E+01	8.8708E+01
H	-4.4822E+00	-9.0673E+00	-1.1039E+01
A	1.0299E+01	1.5167E+01	1.6671E+01
S	2.4580E+00	2.6894E+00	2.7834E+00
Z	2.6951E+00	3.1511E+00	3.2737E+00
GAME	9.5254E-01	9.4389E-01	9.4189E-01
U	3.3697E+01	6.3322E+00	6.3900E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	8.0473E-03	6.2490E-02	9.2006E-02
O	6.1824E-01	5.7821E-01	5.3708E-01
O+	1.4991E-03	3.3174E-02	5.6410E-02
O++	3.0261E-14	1.2431E-07	1.6608E-06
O-	8.3435E-04	6.4716E-03	6.9451E-03
O2	3.5289E-03	2.6524E-03	1.7993E-03
O2+	6.5821E-05	6.4189E-04	7.6359E-04
O2-	1.0586E-05	8.9934E-05	7.8006E-05
C	2.4369E-01	2.6783E-01	2.5517E-01
C+	6.5668E-03	3.5664E-02	4.2476E-02
C++	2.4360E-10	3.3547E-06	1.6886E-05
C-	2.4438E-04	1.7649E-03	1.6404E-03
CO	1.1300E-01	8.7323E-03	4.2169E-03
CO+	1.0049E-03	1.3301E-03	9.8313E-04
CO2	1.5336E-04	5.3422E-06	1.6106E-06
C2	3.1132E-03	9.3979E-04	4.1028E-04

P1 = 5.00E+04 N/SQ-M, US1= 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8035E+03	2.0385E+04	2.9135E+04
T	4.5735E+01	8.6204E+01	1.0045E+02
RHO	1.3723E+01	7.2462E+01	8.5220E+01
H	-5.2851E+00	-1.0527E+01	-1.2809E+01
A	1.1357E+01	1.6276E+01	1.8032E+01
S	2.5926E+00	2.7806E+00	2.8780E+00
Z	2.6736E+00	3.2635E+00	3.4034E+00
GAME	9.8146E-01	9.4169E-01	9.5103E-01
U	3.6022E+01	6.8321E+00	6.9132E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4944E-02	8.9152E-02	1.2341E-01
O	6.3252E-01	5.4402E-01	4.9449E-01
O+	3.2528E-03	5.2197E-02	8.0628E-02
O++	9.2417E-13	9.3649E-07	9.3517E-06
O-	1.2117E-03	6.3369E-03	6.1148E-03
O2	2.5640E-03	1.7181E-03	1.0743E-03
O2+	8.8280E-05	6.7066E-04	7.1074E-04
O2-	1.1607E-05	6.4890E-05	4.9126E-05
C	2.7674E-01	2.5522E-01	2.4049E-01
C+	1.2199E-02	4.3231E-02	4.8743E-02
C++	2.4959E-09	1.2392E-05	5.2469E-05
C-	3.9569E-04	1.5555E-03	1.2080E-03
CO	5.2564E-02	4.3955E-03	2.0656E-03
CO+	1.0230E-03	5.8382E-04	6.7227E-04
CO2	4.8627E-05	1.6463E-06	4.7787E-07
C2	2.4359E-03	4.4188E-04	1.8147E-04

P1 = 5.00E+04 N/SQ-M, US1= 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6389E+03	1.8982E+04	2.7071E+04
T	4.2437E+01	7.9899E+01	9.3044E+01
RHO	1.4050E+01	7.4642E+01	8.7918E+01
H	-4.7058E+00	-9.4766E+00	-1.1532E+01
A	1.0584E+01	1.5481E+01	1.7046E+01
S	2.5257E+00	2.7157E+00	2.8106E+00
Z	2.7487E+00	3.1829E+00	3.3094E+00
GAME	9.6031E-01	9.4235E-01	9.4369E-01
U	3.4269E+01	6.4790E+00	6.5301E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.5227E-03	6.9809E-02	1.0066E-01
C	6.2370E-01	5.6907E-01	5.2545E-01
O+	1.8428E-03	3.8245E-02	6.3028E-02
O++	7.6055E-14	2.3247E-07	2.8077E-06
O-	9.3204E-04	6.4946E-03	6.7604E-03
O2	3.2624E-03	2.3480E-03	1.5630E-03
O2+	7.1463E-05	6.5679E-04	1.7581E-04
O2-	1.1021E-05	8.2720E-05	1.09214E-05
C	2.5522E-01	2.6447E-01	2.5117E-01
C+	7.8230E-03	3.7967E-02	4.4314E-02
C++	4.5939E-10	5.0263E-06	1.23759E-05
C-	2.8395E-04	1.7179E-03	1.5487E-03
CC	9.3186E-02	7.1443E-03	3.4415E-03
CO+	1.0215E-03	1.2254E-03	8.8603E-04
CO2	1.1488E-04	3.7866E-06	1.1390E-06
C2	2.9558E-03	7.5707E-04	3.2522E-04

P1 = 5.00E+04 N/SQ-M, US1= 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5739E+03	2.1554E+04	3.0869E+04
T	4.9935E+01	9.2437E+01	1.0802E+02
RHO	1.3265E+01	6.9642E+01	8.1527E+01
H	-5.8598E+00	-1.1615E+01	-1.4136E+01
A	1.2164E+01	1.7100E+01	1.9084E+01
S	2.6570E+00	2.8445E+00	2.9446E+00
Z	2.9800E+00	3.3481E+00	3.5051E+00
GAME	9.5435E-01	9.4483E-01	9.6185E-01
U	3.7635E+01	7.1788E+00	7.3114E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4281E-02	1.0982E-01	1.4745E-01
C	6.3200E-01	5.1635E-01	4.6148E-01
O+	6.1439E-03	6.7682E-02	9.9290E-02
O++	1.4453E-11	3.1113E-06	2.7252E-05
O-	1.5311E-03	5.9264E-03	5.2969E-03
O2	1.8839E-03	1.2348E-03	7.1465E-04
O2+	1.1006E-04	6.5284E-04	6.3599E-04
O2-	1.1275E-05	4.8507E-05	3.2844E-05
C	2.8529E-01	2.4514E-01	2.2890E-01
C+	1.9200E-02	4.7984E-02	5.3155E-02
C++	1.5708E-08	2.7174E-05	1.0788E-04
C-	5.1355E-04	1.3586E-03	1.0721E-03
CO	2.6166E-02	2.7379E-03	1.2330E-03
CO+	9.6357E-04	7.7550E-04	5.0032E-04
CO2	1.6836E-05	7.3188E-07	1.9915E-07
C2	1.6705E-03	2.5888E-04	1.0126E-04

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1512E+03	2.2684E+04	3.2585E+04
T	5.4703E+01	9.8747E+01	1.1597E+02
RHO	1.2821E+01	6.6822E+01	7.7729E+01
H	-6.5383E+00	-1.2747E+01	-1.5530E+01
A	1.2878E+01	1.7969E+01	2.0221E+01
S	2.7182E+00	2.9068E+00	3.0097E+00
Z	3.0673E+00	3.4377E+00	3.6150E+00
GAME	9.8841E-01	9.5111E-01	9.7539E-01
U	3.9234E+01	7.5384E+00	7.7466E+00

SPECIES	MOLE FRACTIONS		
E-	3.8326E-02	1.3145E-01	1.7242E-01
O	6.2213E-01	4.8674E-01	4.2702E-01
O+	1.1379E-02	8.4306E-02	1.1858E-01
O++	2.0236E-10	5.0097E-06	7.2235E-05
G-	2.018310E-03	5.3633E-03	4.4282E-03
O2	1.513487E-03	8.7332E-04	4.6177E-04
O2+	1.13475E-04	6.1210E-04	5.4670E-04
O2-	1.0268E-05	3.4979E-05	2.0944E-05
C	2.8109E-01	2.3457E-01	2.1655E-01
C+	2.8394E-02	5.2357E-02	5.7675E-02
C++	8.9717E-08	5.4932E-05	2.1131E-04
C-	6.0568E-04	1.1583E-03	8.5919E-04
CO	1.2832E-02	1.7191E-03	7.3098E-04
CO+	8.6537E-04	6.0338E-04	3.6640E-04
CO2	5.5793E-06	3.3103E-07	8.2445E-08
C2	1.0413E-03	1.5276E-04	5.6551E-05

P1 = 5.00E+04 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5321E+03	2.5470E+04	3.6983E+04
T	6.3981E+01	1.1219E+02	1.3373E+02
RHO	1.2284E+01	6.2509E+01	7.1685E+01
H	-7.5014E+00	-1.5169E+01	-1.8582E+01
A	1.4097E+01	1.9896E+01	2.2766E+01
S	2.8324E+00	3.0251E+00	3.1249E+00
Z	3.2218E+00	3.6319E+00	3.8578E+00
GAME	9.6405E-01	9.7152E-01	1.0047E+00
U	4.2488E+01	8.3601E+00	8.7687E+00

SPECIES	MOLE FRACTIONS		
E-	7.5016E-02	1.7613E-01	2.2348E-01
O	5.8294E-01	4.2439E-01	3.5686E-01
O+	2.9061E-02	1.1926E-01	1.5676E-01
O++	1.1391E-08	5.7286E-05	4.1218E-04
O-	2.1952E-03	4.0690E-03	2.8460E-03
O2	7.5434E-04	4.1774E-04	1.7942E-04
O2+	1.7860E-04	4.9283E-04	3.6618E-04
O2-	7.8800E-06	1.6790E-05	7.6780E-06
C	2.5610E-01	2.1266E-01	1.9011E-01
C+	4.7984E-02	6.0410E-02	6.7260E-02
C++	1.2356E-06	1.9184E-04	7.3002E-04
C-	6.6360E-04	8.0295E-04	5.2610E-04
CO	4.0337E-03	6.8585E-04	2.5220E-04
CO+	6.6130E-04	3.5460E-04	1.8857E-04
CO2	8.8164E-07	7.0238E-08	1.4009E-08
C2	4.0234E-04	5.4437E-05	1.7751E-05

P1 = 5.00E+04 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3373E+03	2.3983E+04	3.4610E+04
T	5.9463E+01	1.0531E+02	1.2451E+02
RHO	1.2457E+01	6.4473E+01	7.4472E+01
H	-7.2054E+00	-1.3931E+01	-1.7012E+01
A	1.3505E+01	1.8899E+01	2.1454E+01
S	2.7764E+00	2.9670E+00	3.0731E+00
Z	3.1454E+00	3.5323E+00	3.7325E+00
GAME	9.7511E-01	9.6018E-01	9.9039E-01
U	4.0853E+01	7.9293E+00	8.2334E+00

SPECIES	MOLE FRACTIONS		
E-	5.5775E-02	1.5366E-01	1.9786E-01
O	6.0473E-01	4.5586E-01	3.9192E-01
O+	1.9129E-02	1.0165E-01	1.3792E-01
O++	1.6706E-09	2.3646E-05	1.7823E-04
O-	2.0572E-03	4.7280E-03	3.5959E-03
O2	9.6219E-04	6.0800E-04	2.9113E-04
O2+	1.5846E-04	5.5694E-04	4.5449E-04
O2-	9.0582E-06	2.4556E-05	1.2886E-05
C	2.6979E-01	2.2372E-01	2.0361E-01
C+	3.8446E-02	5.6448E-02	6.2351E-02
C++	3.8363E-07	1.0493E-04	3.9927E-04
C-	6.5387E-04	9.7113E-04	6.7710E-04
CO	6.8592E-03	1.0848E-03	4.3071E-04
CO+	7.6010E-04	4.6472E-04	2.6462E-04
CO2	2.0714E-06	1.5184E-07	3.4030E-08
C2	6.3535E-04	9.0862E-05	3.1649E-05

P1 = 5.00E+04 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7359E+03	2.7111E+04	3.9675E+04
T	6.8263E+01	1.1946E+02	1.4338E+02
RHO	1.2146E+01	6.0730E+01	6.9413E+01
H	-8.6263E+00	-1.6459E+01	-2.0245E+01
A	1.4686E+01	2.0963E+01	2.4089E+01
S	2.8866E+00	3.0815E+00	3.1940E+00
Z	3.2596E+00	3.7370E+00	3.9866E+00
GAME	9.5669E-01	9.8434E-01	1.0152E+00
U	4.4143E+01	8.8418E+00	9.3545E+00

SPECIES	MOLE FRACTIONS		
E-	9.5111E-02	1.9878E-01	2.4828E-01
O	5.5838E-01	3.9270E-01	3.2349E-01
O+	4.0781E-02	1.3681E-01	1.7401E-01
O++	5.0495E-08	1.3011E-04	8.7454E-04
O-	2.2670E-03	3.4199E-03	2.2238E-03
O2	5.8669E-04	2.8117E-04	1.1026E-04
O2+	1.9408E-04	4.2420E-04	2.8899E-04
O2-	6.7849E-06	1.1145E-05	4.5386E-06
C	2.4216E-01	2.0130E-01	1.7655E-01
C+	5.6478E-02	6.4421E-02	7.2205E-02
C++	3.2182E-06	3.3931E-04	1.2679E-03
C-	6.4672E-04	6.5489E-04	4.0774E-04
CO	2.5456E-03	4.3211E-04	1.4951E-04
CO+	5.7167E-04	2.6767E-04	1.3419E-04
CO2	4.1669E-07	3.2458E-08	5.9356E-09
C2	2.6066E-04	3.2711E-05	1.0170E-05

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9482E+03	2.8890E+04	4.2628E+04
T	7.2336E+01	1.2701E+02	1.5331E+02
RHO	1.2062E+01	5.9158E+01	6.7521E+01
H	-9.3795E+00	-1.7802E+01	-2.1986E+01
A	1.5258E+01	2.2066E+01	2.5382E+01
S	2.9389E+00	3.1353E+00	3.2511E+00
Z	3.3752E+00	3.8450E+00	4.1179E+00
GAME	9.5245E-01	9.9705E-01	1.0205E+00
U	4.5811E+01	9.3549E+00	9.9499E+00

SPECIES	MOLE FRACTIONS		
E-	1.1536E-01	2.2093E-01	2.7207E-01
O	5.3226E-02	3.6192E-01	2.9226E-01
O+	5.3799E-02	1.5356E-01	1.8922E-01
O++	1.7588E-07	2.7497E-04	1.7014E-03
O-	2.2740E-03	2.8261E-03	1.7286E-03
O2	4.6323E-04	1.8749E-04	6.8140E-05
O2+	2.0445E-04	3.5729E-04	2.2471E-04
O2-	5.7915E-06	7.2700E-06	2.6912E-06
C	2.2891E-01	1.8987E-01	1.6312E-01
C+	6.3746E-02	6.8471E-02	7.7014E-02
C++	7.1504E-06	5.7673E-04	2.0837E-03
C-	6.1363E-04	5.3033E-04	3.1690E-04
CO	1.6918E-03	2.7379E-04	9.0224E-05
CO+	4.9205E-04	2.0124E-04	9.5707E-05
CO2	2.1318E-07	1.5219E-08	2.6106E-09
C2	1.7248E-04	1.9917E-05	5.9772E-06

P1 = 5.00E+04 N/SQ-M, US1= 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.3976E+03	3.2583E+04	4.8901E+04
T	8.6255E+01	1.4301E+02	1.7315E+02
RHO	1.1921E+01	5.5930E+01	6.4430E+01
H	-1.6972E+01	-2.0631E+01	-2.5680E+01
A	1.6462E+01	2.4328E+01	2.7802E+01
S	3.6423E+00	3.2395E+00	3.3606E+00
Z	3.5495E+00	4.0737E+00	4.3834E+00
GAME	9.5082E-01	1.0159E+00	1.0184E+00
U	4.9153E+01	1.0477E+01	1.1148E+01

SPECIES	MOLE FRACTIONS		
E-	1.5648E-01	2.6422E-01	3.1595E-01
C	4.7587E-01	3.0317E-01	2.3739E-01
O+	8.3287E-02	1.8406E-01	2.1246E-01
O++	1.3843E-06	1.0275E-03	4.5490E-03
O-	2.1466E-03	1.8435E-03	1.0586E-03
C2	2.8847E-04	8.0612E-05	2.7385E-05
O2+	2.6970E-04	2.3804E-04	1.3326E-04
O2-	4.0166E-06	2.9230E-06	9.9783E-07
C	2.0431E-01	1.6635E-01	1.3779E-01
C+	7.5433E-02	7.6931E-02	8.5253E-02
C++	2.6726E-05	1.5095E-03	4.7030E-03
C-	5.2036E-04	3.4020E-04	1.9722E-04
CO	8.6678E-04	1.1012E-04	3.5525E-05
CO+	3.5558E-04	1.1162E-04	4.9942E-05
CO2	6.1557E-08	3.4028E-09	5.8555E-10
C2	7.8137E-05	7.5462E-06	2.2759E-06

P1 = 5.00E+04 N/SQ-M, US1= 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1689E+03	3.0697E+04	4.5689E+04
T	7.6364E+01	1.3498E+02	1.6330E+02
RHO	1.1982E+01	5.7437E+01	6.5816E+01
H	-1.0162E+01	-1.9192E+01	-2.3800E+01
A	1.5856E+01	2.3213E+01	2.6621E+01
S	2.5513E+00	3.1888E+00	3.3068E+00
Z	3.4632E+00	3.9595E+00	4.2510E+00
GAME	9.5062E-01	1.0082E+00	1.0209E+00
U	4.7481E+01	9.9075E+00	1.0555E+01

SPECIES	MOLE FRACTIONS		
E-	1.3615E-01	2.4320E-01	2.9473E-01
C	5.0434E-01	3.3141E-01	2.6343E-01
O+	6.8200E-02	1.6970E-01	2.0211E-01
O++	5.2860E-07	5.5295E-04	3.0305E-03
O-	2.2275E-03	2.2868E-03	1.3459E-03
O2	3.6525E-04	1.2244E-04	4.2676E-05
O2+	2.0958E-04	2.9313E-04	1.7312E-04
O2-	4.8532E-06	4.5991E-06	1.6163E-06
C	2.1615E-01	1.7796E-01	1.5007E-01
C+	7.0091E-02	7.2759E-02	8.1460E-02
C++	1.4444E-05	9.5650E-04	3.2278E-03
C-	5.6930E-04	4.2403E-04	2.4820E-04
CO	1.1500E-03	1.7196E-04	5.5721E-05
CO+	4.1931E-04	1.4945E-04	6.8696E-05
CO2	1.1278E-07	7.0628E-09	1.2009E-09
C2	1.1519E-04	1.2100E-05	3.6197E-06

P1 = 5.00E+04 N/SQ-M, US1= 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6340E+03	3.4470E+04	5.2158E+04
T	8.4225E+01	1.5116E+02	1.8266E+02
RHO	1.1855E+01	5.4419E+01	6.3259E+01
H	-1.1812E+01	-2.2114E+01	-2.7616E+01
A	1.7089E+01	2.5415E+01	2.8932E+01
S	3.0928E+00	3.2893E+00	3.4127E+00
Z	3.6395E+00	4.1903E+00	4.5138E+00
GAME	9.5274E-01	1.0197E+00	1.0152E+00
U	5.0822E+01	1.1079E+01	1.1718E+01

SPECIES	MOLE FRACTIONS		
E-	1.7718E-01	2.8457E-01	3.3565E-01
C	4.4676E-01	2.7651E-01	2.1410E-01
O+	9.9021E-02	1.9686E-01	2.2058E-01
O++	3.3030E-06	1.7956E-03	7.4621E-03
O-	2.6156E-03	1.4778E-03	8.4398E-04
O2	2.2624E-04	5.3103E-05	1.8070E-05
O2+	2.0513E-04	1.9084E-04	1.0297E-04
O2-	3.2632E-06	1.8518E-06	6.3587E-07
C	1.9312E-01	1.5481E-01	1.2648E-01
C+	8.0043E-02	8.1007E-02	8.8273E-02
C++	4.6750E-05	2.2922E-03	6.4698E-03
C-	4.6854E-04	2.7289E-04	1.5935E-04
CO	5.637E-04	7.1157E-05	2.3426E-05
CO+	2.9909E-04	8.3333E-05	3.6882E-05
CO2	3.4600E-08	1.6718E-09	3.0303E-10
C2	5.3281E-05	4.7748E-06	1.4876E-06

TABLE I.- Continued

$$p_1 = 50 \text{ kN/m}^2$$

P1 = 5.00E+04 N/SQ-M, US1= 1.55E+04 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8785E+03	3.6418E+04	5.5504E+04
T	8.8137E+01	1.5940E+02	1.9197E+02
RHO	1.1753E+01	5.3025E+01	6.2254E+01
M	-1.2679E+01	-2.3647E+01	-2.9611E+01
A	1.7733E+01	2.6468E+01	3.0045E+01
S	3.1419E+00	3.3385E+00	3.4638E+00
Z	2.7314E+00	4.3087E+00	4.6443E+00
GAME	9.5616E-01	1.0200E+00	1.0125E+00
U	5.2492E+01	1.1674E+01	1.2267E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.9720E-01	3.0413E-01	3.5428E-01
O	4.1782E-01	2.5164E-01	1.9291E-01
O+	1.1489E-01	2.0792E-01	2.2623E-01
O++	7.2410E-06	2.9576E-03	1.0585E-02
O-	1.8760E-03	1.1840E-03	6.7946E-04
O2	1.7655E-04	3.5204E-05	1.2155E-05
O2+	1.9671E-04	1.5172E-04	7.9619E-05
O2-	2.6122E-06	1.1797E-06	4.1452E-07
C	1.8267E-01	1.4351E-01	1.1598E-01
C+	8.3991E-02	8.4799E-02	9.0549E-02
C++	7.7686E-05	3.3455E-03	8.5164E-03
C-	4.1835E-04	2.1966E-04	1.3037E-04
CO	4.0013E-04	4.6581E-05	1.5823E-05
CO+	2.5029E-04	6.2337E-05	2.7512E-05
CO2	1.9646E-08	8.4334E-10	1.6365E-10
C2	3.6671E-05	3.0741E-06	1.0002E-06

P1 = 5.00E+04 N/SQ-M, US1= 1.60E+04 M/SEC

	PCVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1301E+03	3.8361E+04	5.8824E+04
T	9.2120E+01	1.6736E+02	2.0103E+02
RHO	1.1715E+01	5.1809E+01	6.1276E+01
M	-1.3574E+01	-2.5226E+01	-3.1657E+01
A	1.8406E+01	2.7454E+01	3.1151E+01
S	3.1907E+00	3.3856E+00	3.5144E+00
Z	3.8270E+00	4.4240E+00	4.7754E+00
GAME	9.6100E-01	1.0180E+00	1.0109E+00
U	5.4152E+01	1.2253E+01	1.2794E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.1704E-01	3.2221E-01	3.7197E-01
O	3.8880E-01	2.2941E-01	1.7356E-01
O+	1.3094E-01	2.1680E-01	2.3027E-01
O++	1.5006E-05	4.5326E-03	1.4268E-02
O-	1.7136E-03	9.5898E-04	5.5115E-04
O2	1.3606E-04	2.3916E-05	8.2993E-06
O2+	1.8485E-04	1.2102E-04	6.1559E-05
O2-	2.0466E-06	7.7203E-07	2.7487E-07
C	1.7264E-01	1.3301E-01	1.0624E-01
C+	8.7515E-02	8.8033E-02	9.2127E-02
C++	1.2508E-04	4.6387E-03	1.0808E-02
C-	3.6885E-04	1.7925E-04	1.0772E-04
CO	2.8424E-04	3.1422E-05	1.0892E-05
CO+	2.0759E-04	4.7295E-05	2.0688E-05
CO2	1.1148E-08	4.4870E-10	9.1350E-11
C2	2.5222E-05	2.0481E-06	6.8802E-07

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7599E+01
M	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0880E+00	1.1035E+00	1.1262E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.5208E-53	4.5366E-44	1.5917E-35
O	2.3031E-15	1.4725E-12	8.5463E-11
O+	1.4210E-38	9.4625E-35	6.6431E-32
O++	0.	0.	0.
O-	6.6141E-59	2.0109E-48	4.0987E-39
O2	4.3992E-04	4.3992E-04	4.3999E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9637E-42	3.6805E-34
C	7.4629E-55	6.5544E-46	6.6002E-38
C+	4.1164E-65	9.3505E-57	2.5234E-49
C++	0.	0.	0.
C-	0.	9.7169E-82	6.5336E-67
CO	1.6158E-12	1.5556E-09	1.4587E-07
CO+	2.3571E-37	5.1645E-33	1.1317E-29
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	4.5772E-79	3.9777E-66	3.1469E-54

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9412E+02	2.9195E+02
T	3.8892E+00	5.6950E+00	6.6011E+00
RHO	8.0418E+00	3.4083E+01	4.4185E+01
M	8.8932E-01	8.0790E-01	7.6476E-01
A	1.8839E+00	2.2681E+00	2.4356E+00
S	1.1638E+00	1.1954E+00	1.2215E+00
Z	1.0000E+00	1.0001E+00	1.0009E+00
GAME	9.1255E-01	9.0321E-01	8.9784E-01
U	4.5382E+00	1.0733E+00	1.0082E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4090E-36	1.6293E-21	7.6219E-18
O	5.0635E-11	8.1772E-08	1.2677E-06
O+	2.1408E-32	2.7345E-27	1.8133E-24
O++	0.	0.	1.4159E-93
O-	1.5943E-40	8.9895E-24	1.0725E-19
O2	4.3995E-04	5.5919E-04	1.3425E-03
O2+	1.7597E-18	1.7597E-18	2.5850E-17
O2-	1.1709E-55	2.4685E-21	1.6364E-17
C	6.8272E-59	1.3329E-25	3.5547E-21
C+	3.0668E-50	4.2223E-39	9.4258E-33
C++	0.	2.7642E-87	8.6386E-77
C-	7.5985E-69	1.2140E-40	1.7596E-34
CO	7.6361E-08	2.3074E-04	1.8072E-03
CO+	2.8879E-30	2.0973E-24	9.0283E-22
CO2	9.9956E-01	9.9921E-01	9.9685E-01
C2	1.0959E-55	3.4769E-35	8.1217E-30

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2169E+02	1.9028E+02
T	3.1957E+00	4.5033E+00	5.2624E+00
RHO	7.1505E+00	2.7026E+01	3.6154E+01
M	9.1903E-01	8.6219E-01	8.2786E-01
A	1.7137E+00	2.0230E+00	2.1827E+00
S	1.1258E+00	1.1497E+00	1.1744E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1904E-01	9.0878E-01	9.0530E-01
U	3.8201E+00	1.0100E+00	9.3959E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2349E-43	4.2074E-28	2.1328E-24
O	2.1319E-13	5.9297E-10	1.8389E-08
O+	4.8859E-35	2.3802E-30	3.4531E-28
O++	0.	0.	0.
O-	3.5155E-48	4.1066E-31	4.6503E-27
O2	4.3992E-04	4.4045E-04	4.6628E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0044E-42	1.5906E-27	9.8921E-24
C	1.6483E-45	5.1164E-31	1.2707E-27
C+	2.1580E-56	5.8809E-43	8.1431E-40
C++	0.	1.2519E-99	3.2025E-134
C-	7.0411E-82	4.6204E-63	3.5511E-023
CO	3.7218E-10	1.0588E-06	5.2760E-05
CO+	3.2339E-33	2.0282E-27	2.2496E-25
CO2	9.9956E-01	9.9956E-01	9.9948E-01
C2	1.7888E-65	6.8632E-44	5.1148E-39

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8584E+02	4.1684E+02
T	4.6620E+00	6.9938E+00	7.9731E+00
RHO	8.8000E+00	4.0796E+01	5.1959E+01
M	8.5508E-01	7.4508E-01	6.9271E-01
A	2.0574E+00	2.5038E+00	2.6678E+00
S	1.2012E+00	1.2396E+00	1.2667E+00
Z	1.0000E+00	1.0018E+00	1.0062E+00
GAME	9.0795E-01	8.9472E-01	8.8715E-01
U	5.2490E+00	1.1335E+00	1.0688E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.0986E-26	5.6519E-17	5.3592E-15
O	2.7399E-09	3.8300E-06	3.3036E-05
O+	3.8111E-30	1.5459E-23	2.8767E-20
O++	0.	1.2531E-88	1.2044E-79
O-	7.6626E-30	9.5334E-19	3.4138E-16
O2	4.4301E-04	2.2464E-03	6.5328E-03
O2+	1.7597E-18	1.8031E-16	2.3982E-14
O2-	1.0967E-26	1.2109E-16	1.8286E-14
C	1.0079E-29	3.3565E-20	3.0891E-17
C+	9.2160E-42	1.3592E-31	3.6785E-27
C++	0.	1.0502E-72	3.5903E-65
C-	9.9188E-51	4.1119E-33	1.1768E-28
CO	6.1968E-06	3.6184E-03	1.2224E-02
CO+	1.3701E-27	8.2889E-21	6.2916E-18
CO2	9.9956E-01	9.9413E-01	9.8121E-01
C2	4.1690E-42	2.4247E-29	1.4967E-24

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2096E+01	3.9791E+02	5.6466E+02
T	5.5129E+00	8.2919E+00	9.2517E+00
RHO	9.4483E+00	4.7581E+01	5.9827E+01
M	8.1627E-01	6.7357E-01	6.1203E-01
A	2.2321E+00	2.7198E+00	2.8799E+00
S	1.2376E+00	1.2826E+00	1.3107E+00
Z	1.0001E+00	1.0090E+00	1.0202E+00
GAME	9.0361E-01	8.8419E-01	8.7874E-01
U	9.9565E+00	1.1851E+00	1.1157E+00

SPECIES	MOLE FRACTIONS		
E-	2.9952E-22	1.9709E-14	4.5536E-13
O	9.1875E-08	6.5794E-05	2.9307E-04
O+	2.2924E-27	1.7125E-19	2.7551E-17
O++	0.	6.6310E-75	3.4195E-68
O-	4.6484E-25	1.5647E-15	8.8524E-14
O2	5.5831E-04	9.2821E-03	1.9893E-02
O2+	1.7600E-18	8.9519E-14	2.8177E-12
O2-	4.0571E-22	6.8276E-14	2.2767E-12
C	9.2605E-26	1.6461E-16	1.5756E-14
C+	3.9522E-38	2.5103E-26	4.1686E-23
C++	7.8797E-93	1.8004E-61	6.9776E-56
C-	1.8122E-43	7.3543E-28	1.9689E-24
CO	2.3697E-04	1.7758E-02	3.9217E-02
CO+	1.4862E-24	3.1898E-17	2.8916E-15
CO2	9.9920E-01	9.7289E-01	9.4060E-01
C2	1.0593E-36	1.0394E-23	8.1410E-21

P1 = 1.00E+05 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8326E+01	6.9598E+02	9.4378E+02
T	7.3332E+00	1.0606E+01	1.1507E+01
RHO	1.0631E+01	6.2438E+01	7.6125E+01
M	7.2489E-01	5.0373E-01	4.2320E-01
A	2.5973E+00	3.1233E+00	3.2967E+00
S	1.3069E+00	1.3674E+00	1.3983E+00
Z	1.0048E+00	1.0509E+00	1.0774E+00
GAME	8.8761E-01	8.7521E-01	8.7662E-01
U	7.3752E+00	1.2579E+00	1.1963E+00

SPECIES	MOLE FRACTIONS		
E-	9.6085E-16	1.7027E-11	9.6180E-11
O	2.1768E-05	1.6825E-03	3.7217E-03
O+	1.9017E-22	7.3195E-15	1.1005E-13
O++	5.5875E-83	4.3353E-59	3.6186E-53
O-	1.3219E-17	7.6416E-12	6.7947E-11
O2	5.1540E-03	4.7159E-02	6.8538E-02
O2+	1.8482E-15	1.2855E-10	8.7927E-10
O2-	8.7251E-16	1.0428E-10	7.1591E-10
C	6.3965E-19	2.4034E-12	2.8087E-11
C+	6.5300E-29	8.5525E-20	2.9666E-18
C++	6.2454E-68	2.3974E-48	9.3793E-44
C-	1.4184E-30	5.3191E-21	2.0620E-19
CO	9.4542E-03	9.5163E-02	1.3998E-01
CO+	1.2501E-19	3.9740E-13	4.6589E-12
CO2	9.8937E-01	8.5600E-01	7.8776E-01
C2	1.1278E-26	8.4288E-18	2.4467E-16

P1 = 1.00E+05 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4514E+01	5.3309E+02	7.3800E+02
T	6.4204E+00	9.4967E+00	1.0415E+01
RHO	1.0037E+01	5.4758E+01	6.7868E+01
M	7.7288E-01	5.9320E-01	5.2244E-01
A	2.4010E+00	2.9224E+00	3.0858E+00
S	1.2727E+00	1.3250E+00	1.3543E+00
Z	1.0011E+00	1.0252E+00	1.0442E+00
GAME	8.9688E-01	8.7721E-01	8.7565E-01
U	6.6637E+00	1.2236E+00	1.1554E+00

SPECIES	MOLE FRACTIONS		
E-	6.2572E-18	9.9393E-13	9.5745E-12
O	1.8197E-06	4.4555E-04	1.2790E-03
O+	4.9018E-25	7.1886E-17	2.8799E-15
O++	5.9036E-97	3.0737E-64	5.1610E-59
O-	3.1752E-20	2.1197E-13	3.8700E-12
O2	1.5457E-03	2.4544E-02	4.1433E-02
O2+	1.2291E-17	6.0619E-12	7.4435E-11
O2-	4.2445E-18	4.8633E-12	6.1181E-11
C	9.8187E-22	3.9992E-14	1.0775E-12
C+	4.5418E-34	4.9928E-23	1.6985E-20
C++	1.3035E-79	9.9188E-53	1.8476E-48
C-	2.9753E-36	1.3030E-24	9.4622E-22
CO	2.2145E-03	4.8675E-02	8.3303E-02
CO+	2.2772E-22	7.1445E-15	1.8822E-13
CO2	9.9624E-01	9.2634E-01	8.7398E-01
C2	3.0252E-31	1.7491E-20	2.3687E-18

P1 = 1.00E+05 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3543E+01	8.9196E+02	1.1903E+03
T	8.1955E+00	1.1658E+01	1.2578E+01
RHO	1.1271E+01	7.0504E+01	8.4500E+01
M	6.7227E-01	4.0503E-01	3.1369E-01
A	2.7009E+00	3.9506E+00	3.7197E+00
S	1.5404E+00	1.4100E+00	1.4427E+00
Z	1.0191E+00	1.0852E+00	1.1189E+00
GAME	8.7880E-01	8.7680E-01	8.8029E-01
U	6.0929E+00	1.2961E+00	1.2438E+00

SPECIES	MOLE FRACTIONS		
E-	5.0643E-14	1.4026E-10	6.1333E-10
O	1.4031E-04	4.4610E-03	8.5011E-03
O+	3.6183E-19	1.9160E-13	2.0514E-12
O++	6.8308E-77	6.4678E-54	5.4673E-50
O-	2.3693E-15	1.0321E-10	6.6123E-10
O2	1.3251E-02	7.4403E-02	9.6148E-02
O2+	1.1759E-13	1.2269E-09	6.1758E-09
O2-	6.4623E-14	9.9089E-10	4.9641E-09
C	2.9803E-16	4.5718E-11	3.8404E-10
C+	7.7096E-26	7.1250E-18	1.9056E-16
C++	6.6453E-63	4.1483E-44	7.6950E-41
C-	1.8974E-27	5.1244E-19	1.5320E-17
CO	2.5774E-02	1.5248E-01	2.0401E-01
CO+	4.1437E-17	7.2747E-12	6.0833E-11
CO2	9.6084E-01	7.6864E-01	6.8934E-01
C2	1.3839E-23	4.9278E-16	1.0178E-14

TABLE, I. - Continued

$$p_1 = 100, \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1024E+02	1.1247E+03	1.4835E+03
T	8.9763E+00	1.2692E+01	1.3664E+01
RHO	1.1996E+01	7.8642E+01	9.2975E+01
H	6.1903E-01	2.9711E-01	1.9352E-01
A	2.0372E+00	3.5490E+00	3.7597E+00
S	1.3737E+00	1.4530E+00	1.4876E+00
Z	1.0272E+00	1.1268E+00	1.1677E+00
GAME	8.7306E-01	8.8073E-01	8.8592E-01
U	8.8160E+00	1.3427E+00	1.3007E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.9264E-13	7.8865E-10	2.9253E-09
O	5.4245E-04	9.6564E-03	1.6647E-02
O+	2.2587E-17	2.8430E-12	2.3247E-11
O++	2.9499E-69	1.7467E-49	7.5592E-46
H	7.1684E-14	8.5605E-10	4.3610E-09
O2	2.6345E-02	1.0328E-01	1.2754E-01
O2+	2.1193E-12	7.6020E-09	3.1185E-08
O2-	1.2527E-12	6.0395E-09	2.4438E-08
C	1.3054E-14	5.1635E-10	3.4059E-09
C+	1.9005E-23	2.9282E-16	5.3060E-15
C++	7.0842E-97	1.9808E-40	1.8965E-37
C-	6.0159E-25	2.3566E-17	4.8387E-16
CO	5.2976E-02	2.1544E-01	2.7058E-01
CO+	1.6809E-15	7.9393E-11	9.1591E-10
CO2	9.2074E-01	6.7162E-01	5.8943E-01
C2	2.3183E-21	1.4627E-14	2.1605E-13

P1 = 1.00E+05 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2832E+02	1.3940E+03	1.8243E+03
T	9.6902E+00	1.3734E+01	1.4796E+01
RHO	1.2651E+01	8.6390E+01	1.0082E+02
H	5.5320E-01	1.8014E-01	6.2540E-02
A	2.9714E+00	3.7818E+00	4.0201E+00
S	1.4071E+00	1.4963E+00	1.5330E+00
Z	1.0467E+00	1.1749E+00	1.2230E+00
GAME	8.7046E-01	8.8635E-01	8.9314E-01
U	9.5416E+00	1.3996E+00	1.3690E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.7787E-12	3.4328E-09	1.1577E-08
O	1.9046E-03	1.8111E-02	2.9355E-02
O+	6.3822E-16	2.7939E-11	1.9279E-10
O++	1.5789E-64	1.2003E-45	2.6812E-42
H	1.0423E-12	5.0494E-09	2.2235E-08
O2	4.3561E-02	1.3110E-01	1.5336E-01
O2+	2.0253E-11	3.4892E-08	1.2532E-07
O2-	1.2464E-11	2.7032E-08	9.5009E-08
C	2.6424E-13	4.0326E-09	2.2962E-08
C+	2.0408E-21	6.9236E-15	1.0393E-13
C++	1.1045E-52	2.8356E-37	1.5844E-34
C-	8.0975E-23	6.0487E-16	9.7312E-15
CO	8.7787E-02	2.7957E-01	3.3536E-01
CO+	3.1269E-14	5.9440E-10	3.3063E-09
CO2	8.6715E-01	5.7121E-01	4.8192E-01
C2	1.6060E-19	2.5951E-13	3.0964E-12

P1 = 1.00E+05 N/SQ-M, US1 = 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4779E+02	1.6982E+03	2.2130E+03
T	1.0353E+01	1.4810E+01	1.4003E+01
RHO	1.3326E+01	9.3343E+01	1.0768E+02
H	4.8677E-01	5.4324E-02	-7.9491E-02
A	3.1066E+00	4.0315E+00	4.3051E+00
S	1.4409E+00	1.5397E+00	1.5788E+00
Z	1.0713E+00	1.2284E+00	1.2842E+00
GAME	8.7015E-01	8.9336E-01	9.0182E-01
U	1.0267E+01	1.4682E+00	1.4534E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.6131E-11	1.2580E-08	4.0731E-08
O	3.3416E-03	3.0846E-02	4.8019E-02
O+	7.8726E-15	2.0612E-10	1.3113E-09
O++	4.3933E-59	9.8844E-43	4.9290E-39
H	8.1143E-12	2.3474E-08	9.5232E-08
O2	6.3600E-02	1.5546E-01	1.7365E-01
O2+	1.1758E-10	1.2946E-07	4.2838E-07
O2-	7.3639E-11	9.7047E-08	3.1135E-07
C	2.6099E-12	2.4482E-08	1.3011E-07
C+	9.3527E-20	1.1096E-13	1.9321E-12
C++	1.7590E-48	1.1862E-34	7.8284E-32
C-	2.3712E-21	1.0279E-14	1.4976E-13
CO	1.2972E-01	3.4106E-01	3.9444E-01
CO+	2.9562E-13	3.4357E-09	1.7618E-08
CO2	8.0334E-01	4.7264E-01	3.8368E-01
C2	3.4391E-18	3.2098E-12	3.4926E-11

P1 = 1.00E+05 N/SQ-M, US1 = 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6863E+02	2.0338E+03	2.4453E+03
T	1.0984E+01	1.5941E+01	1.7305E+01
RHO	1.3955E+01	9.9157E+01	1.1321E+02
H	4.1777E-01	-8.0154E-02	-2.3253E-01
A	3.2450E+00	4.3007E+00	4.6149E+00
S	1.4750E+00	1.5832E+00	1.6245E+00
Z	1.1002E+00	1.2867E+00	1.3502E+00
GAME	8.7139E-01	9.0168E-01	9.1182E-01
U	1.0992E+01	1.5494E+00	1.4494E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4845E-10	4.1101E-08	1.3074E-07
O	6.4038E-03	4.8930E-02	7.3849E-02
O+	7.0622E-14	1.2582E-09	7.4610E-09
O++	2.9425E-56	3.9752E-39	3.9010E-36
H	4.6015E-11	9.2147E-08	3.5277E-07
O2	8.5091E-02	1.7423E-01	1.8584E-01
O2+	5.1482E-10	4.1050E-07	1.2774E-06
O2-	3.2244E-10	2.9511E-07	8.8218E-07
C	1.8746E-11	1.2554E-07	4.4354E-07
C+	1.1551E-18	1.4259E-12	1.8314E-11
C++	2.7921E-46	6.4979E-32	2.1744E-29
C-	5.7831E-20	1.3732E-13	1.8351E-12
CO	1.7579E-01	3.9670E-01	4.4494E-01
CO+	2.0238E-12	1.6599E-08	8.0744E-08
CO2	7.3272E-01	3.8014E-01	2.9533E-01
C2	5.4640E-17	3.1720E-11	3.2315E-10

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9081E+02	2.3968E+03	3.1192E+03
T	1.1596E+01	1.7145E+01	1.8732E+01
RHO	1.4522E+01	1.0363E+02	1.1722E+02
H	3.4019E-01	-2.2313E-01	-3.9669E-01
A	3.3889E+00	4.5899E+00	4.9561E+00
S	1.5097E+00	1.6264E+00	1.4701E+00
Z	1.1332E+00	1.3489E+00	1.4206E+00
GAME	8.7374E-01	9.1090E-01	9.2306E-01
U	1.1714E+01	1.6440E+00	1.6534E+00

SPECIES	MOLE FRACTIONS		
E-	5.0309E-10	1.2262E-07	3.9326E-07
O	1.1066E-02	7.3359E-02	1.0796E-01
O+	4.7400E-13	6.4983E-09	3.8473E-08
O++	7.0086E-54	1.7133E-34	3.2380E-33
O-	2.0341E-10	3.1430E-07	1.1641E-06
O2	1.0683E-01	1.8564E-01	1.8841E-01
O2+	1.8219E-09	1.1434E-06	3.3900E-04
O2-	1.1265E-09	7.8207E-07	2.2106E-06
C	1.0329E-10	5.6147E-07	2.8835E-06
C+	1.6739E-17	1.4519E-11	1.9071E-10
C++	6.5902E-44	1.1528E-29	5.3049E-27
C-	9.1282E-19	1.4289E-12	1.9192E-11
CO	2.2394E-01	4.4399E-01	4.8417E-01
CO+	1.0681E-11	6.9106E-08	3.3041E-07
CO2	6.5816E-01	2.9701E-01	2.1944E-01
C2	6.0062E-16	2.5413E-10	2.6092E-09

P1 = 1.00E+05 N/SQ-M, US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3913E+02	3.1856E+03	4.1808E+03
T	1.2808E+01	1.9841E+01	2.2067E+01
RHO	1.5435E+01	1.0830E+02	1.2055E+02
H	1.7336E-01	-5.3400E-01	-7.6136E-01
A	3.6942E+00	5.2370E+00	5.7357E+00
S	1.5801E+00	1.7119E+00	1.7603E+00
Z	1.2096E+00	1.4825E+00	1.5715E+00
GAME	8.8088E-01	9.3237E-01	9.4863E-01
U	1.3150E+01	1.8769E+00	1.9305E+00

SPECIES	MOLE FRACTIONS		
E-	3.9055E-09	9.0215E-07	3.0760E-06
O	2.6880E-02	1.4322E-01	2.0040E-01
O+	1.1267E-11	1.2122E-07	7.1614E-07
O++	1.9248E-48	3.4474E-31	5.6665E-28
O-	2.3542E-09	2.6358E-06	9.4132E-06
O2	1.4676E-01	1.8255E-01	1.6357E-01
O2+	1.4666E-08	6.4407E-04	1.7524E-05
O2-	8.5872E-09	3.8932E-06	9.9653E-06
C	1.7808E-09	8.4703E-06	4.6571E-05
C+	1.3503E-15	1.0127E-09	1.4621E-08
C++	1.8970E-39	2.5420E-24	1.2615E-22
C-	8.1103E-17	9.8747E-11	1.4359E-09
CO	3.1967E-01	5.0772E-01	5.2886E-01
CO+	1.6931E-10	8.6833E-07	4.1989E-06
CO2	5.0669E-01	1.6650E-01	1.0913E-01
C2	3.1110E-14	1.1071E-08	1.2545E-07

P1 = 1.00E+05 N/SQ-M, US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1432E+02	2.7825E+03	3.6331E+03
T	1.2201E+01	1.8441E+01	2.0313E+01
RHO	1.5017E+01	1.0668E+02	1.1964E+02
H	2.6006E-01	-3.7446E-01	-5.7315E-01
A	3.5377E+00	4.9019E+00	5.3294E+00
S	1.5447E+00	1.6693E+00	1.7155E+00
Z	1.1697E+00	1.4144E+00	1.4948E+00
GAME	8.7695E-01	9.2122E-01	9.3543E-01
U	1.2434E+01	1.7529E+00	1.7843E+00

SPECIES	MOLE FRACTIONS		
E-	1.4774E-09	3.4249E-07	1.1258E-06
O	1.7741E-02	1.0479E-01	1.5041E-01
O+	2.5170E-12	2.9760E-08	1.7569E-07
O++	6.9750E-51	1.1549E-33	1.7888E-30
O-	7.4302E-10	9.5829E-07	3.4758E-06
O2	1.2772E-01	1.8852E-01	1.8048E-01
O2+	5.4907E-09	2.8554E-06	8.1487E-06
O2-	3.3187E-09	1.8421E-06	4.9568E-06
C	4.6260E-10	2.2758E-06	1.1997E-05
C+	1.6991E-16	1.3018E-10	1.7712E-09
C++	1.7157E-41	2.2010E-27	9.8756E-25
C-	9.8163E-18	1.2829E-11	1.7644E-10
CO	2.7243E-01	4.8122E-01	5.1138E-01
CO+	4.5860E-11	2.5754E-07	1.2324E-06
CO2	5.8211E-01	2.2546E-01	1.5730E-01
C2	4.8304E-15	1.7864E-09	1.8996E-08

P1 = 1.00E+05 N/SQ-M, US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6525E+02	3.6006E+03	4.7585E+03
T	1.3427E+01	2.1361E+01	2.4032E+01
RHO	1.5772E+01	1.0858E+02	1.2005E+02
H	8.6108E-02	-7.0158E-01	-9.6197E-01
A	3.8589E+00	5.5956E+00	6.1755E+00
S	1.6158E+00	1.7529E+00	1.8042E+00
Z	1.2526E+00	1.5524E+00	1.6495E+00
GAME	8.8544E-01	9.4419E-01	9.6209E-01
U	1.3862E+01	2.0166E+00	2.0961E+00

SPECIES	MOLE FRACTIONS		
E-	9.5371E-09	2.2619E-06	8.1392E-06
O	3.8978E-02	1.8763E-01	2.5464E-01
O+	4.4280E-11	4.4388E-07	2.6209E-06
O++	6.4463E-47	6.7798E-29	1.2255E-25
O-	6.6834E-09	6.6074E-06	2.3434E-05
O2	1.6301E-01	1.6847E-01	1.3928E-01
O2+	3.5676E-08	1.3176E-05	3.3781E-05
O2-	2.0057E-08	7.4397E-06	1.8134E-05
C	6.1144E-09	2.9347E-05	1.7175E-04
C+	8.9018E-14	6.9936E-09	1.0959E-07
C++	6.7660E-38	2.1626E-23	1.2326E-20
C-	5.4799E-16	6.7060E-10	1.0601E-08
CO	3.6429E-01	5.2398E-01	5.3244E-01
CO+	5.5723E-10	2.6832E-06	1.3207E-05
CO2	4.3372E-01	1.1986E-01	7.3362E-02
C2	1.6926E-13	6.2155E-08	7.7744E-07

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9265E+02	4.0214E+03	5.3609E+03
T	1.4064E+01	2.3018E+01	2.6249E+01
RHO	1.6027E+01	1.0764E+02	1.1833E+02
H	-7.6951E-03	-8.7705E-01	-1.1752E+00
A	4.0327E+00	5.9774E+00	6.6428E+00
S	1.6517E+00	1.7933E+00	1.8471E+00
Z	1.2984E+00	1.6231E+00	1.7260E+00
GAME	8.9063E-01	9.5639E-01	9.7398E-01
U	1.4571E+01	2.1726E+00	2.2815E+00

SPECIES	MOLE FRACTIONS		
E-	2.2030E-08	5.4520E-04	2.1201E-07
O	5.4552E-02	2.3404E-01	3.0929E-01
O+	1.6022E-10	1.4701E-05	8.6111E-06
O++	6.8687E-44	9.6249E-27	2.1569E-23
D-	1.7503E-08	1.2907E-05	5.4416E-05
O2	1.7559E-01	1.4804E-01	1.1143E-01
O2+	8.0830E-08	2.4477E-05	5.8019E-05
O2-	4.3154E-08	1.2956E-05	7.0210E-05
C	1.9508E-08	9.6009E-05	6.1114E-04
C+	5.3818E-14	4.4115E-08	7.5764E-07
C++	4.3298E-36	1.4481E-21	1.0365E-18
C-	3.3434E-15	4.1173E-09	7.3784E-08
CO	4.0506E-01	5.3148E-01	5.3059E-01
CO+	1.6971E-09	7.6707E-04	3.8513E-05
CO2	3.6480E-01	8.4262E-02	4.7864E-02
C2	8.3773E-13	3.2356E-07	4.6302E-04

P1 = 1.00E+05 N/SQ-M, US1= 4.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5124E+02	4.8581E+03	6.4086E+03
T	1.5420E+01	2.6840E+01	3.1409E+01
RHO	1.6296E+01	1.0287E+02	1.1314E+02
H	-2.0893E-01	-1.2509E+00	-1.6373E+00
A	4.4110E+00	6.7944E+00	7.5300E+00
S	1.7237E+00	1.8708E+00	1.9286E+00
Z	1.3977E+00	1.7966E+00	1.8597E+00
GAME	9.0273E-01	9.7748E-01	9.7072E-01
U	1.5976E+01	2.5345E+00	2.6866E+00

SPECIES	MOLE FRACTIONS		
E-	1.0362E-07	2.9565E-05	1.3275E-04
O	9.7985E-02	3.3328E-01	3.9990E-01
O+	1.7500E-09	1.2068E-05	6.1173E-05
O++	6.4785E-40	7.8454E-23	1.4718E-19
O-	9.857E-08	6.6686E-05	2.3828E-04
O2	1.8687E-01	9.8462E-02	6.2134E-02
O2+	3.4935E-07	6.3117E-05	1.1819E-04
O2-	1.6214E-07	3.1004E-05	6.7051E-05
C	1.6894E-07	9.0973E-04	6.3009E-03
C+	1.6174E-12	1.3539E-06	2.3423E-05
C++	2.1011E-32	3.4048E-18	2.3407E-15
C-	9.7033E-14	1.2561E-07	2.6827E-06
CO	4.7110E-01	5.2807E-01	5.1097E-01
CO+	1.3212E-08	5.0842E-05	2.3798E-04
CO2	2.4404E-01	3.9015E-02	1.9691E-02
C2	1.6562E-11	7.5421E-06	1.2592E-04

P1 = 1.00E+05 N/SQ-M, US1= 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2132E+02	4.4423E+03	5.9812E+03
T	1.4726E+01	2.4835E+01	2.8743E+01
RHO	1.6201E+01	1.0566E+02	1.1578E+02
H	-1.0604E-01	-1.0602E+00	-1.4010E+00
A	4.2155E+00	6.3800E+00	7.1123E+00
S	1.6877E+00	1.8327E+00	1.8887E+00
Z	1.3468E+00	1.6929E+00	1.7973E+00
GAME	8.9640E-01	9.6819E-01	9.7919E-01
U	1.5276E+01	2.3454E+00	2.4832E+00

SPECIES	MOLE FRACTIONS		
E-	4.8740E-08	1.2792E-05	5.4492E-05
O	7.4091E-02	2.8569E-01	3.9933E-01
O+	5.4808E-10	4.4209E-06	2.4941E-05
O++	6.6496E-42	1.0125E-24	2.3171E-21
D-	4.2873E-08	3.2817E-05	1.1867E-04
O2	1.8375E-01	1.2375E-01	8.4225E-02
O2+	1.7264E-07	4.1287E-05	8.8099E-05
O2-	8.6447E-08	2.0767E-05	4.6627E-05
C	5.8992E-08	3.0074E-04	2.0743E-03
C+	3.0941E-13	2.4455E-07	4.6633E-06
C++	4.6603E-34	7.8240E-20	6.1262E-17
C-	1.9020E-14	2.3423E-08	4.8035E-07
CO	4.4093E-01	5.3220E-01	5.2334E-01
CO+	4.8725E-09	2.0436E-05	1.0257E-04
CO2	3.0123E-01	5.7924E-02	3.0572E-02
C2	3.8843E-12	1.5945E-06	2.6012E-05

P1 = 1.00E+05 N/SQ-M, US1= 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8239E+02	5.2656E+03	7.2283E+03
T	1.6152E+01	2.9023E+01	3.3966E+01
RHO	1.6318E+01	9.9676E+01	1.1118E+02
H	-3.1636E-01	-1.4491E+00	-1.8808E+00
A	4.6169E+00	7.1939E+00	7.8705E+00
S	1.7597E+00	1.9074E+00	1.9665E+00
Z	1.4508E+00	1.8202E+00	1.9141E+00
GAME	9.0961E-01	9.7965E-01	9.5276E-01
U	1.6673E+01	2.7346E+00	2.8673E+00

SPECIES	MOLE FRACTIONS		
E-	2.1203E-07	6.6974E-05	2.8170E-04
O	1.2643E-01	3.7517E-01	4.2974E-01
O+	5.2789E-09	2.9449E-05	1.2243E-04
O++	3.4320E-38	4.1708E-21	3.9684E-18
O-	2.1401E-07	1.2822E-04	4.2207E-04
O2	1.8462E-01	7.5350E-02	4.7439E-02
O2+	6.7336E-07	8.7186E-05	1.4405E-04
O2-	2.8598E-07	4.3541E-05	8.9970E-05
C	4.6324E-07	2.6142E-03	1.5371E-02
C+	7.8502E-12	6.4374E-06	8.3849E-05
C++	6.5533E-31	1.1139E-16	4.2146E-14
C-	4.5943E-13	6.2829E-07	1.0940E-05
CO	4.9506E-01	5.2032E-01	4.9200E-01
CO+	3.4172E-08	1.1629E-04	4.5435E-04
CO2	1.9389E-01	2.6031E-02	1.3390E-02
C2	6.6092E-11	3.3432E-05	4.4514E-04

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+03 N/SQ-M, US1= 5.00E+03 M/SEC

P1 = 1.00E+05 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1475E+02	5.6655E+03	7.8285E+03
T	1.6927E+01	3.1332E+01	3.6215E+01
RHO	1.6270E+01	9.6481E+01	1.0999E+02
M	-4.2831E-01	-1.6549E+00	-2.1293E+00
A	4.8350E+00	7.5477E+00	8.1714E+00
S	1.7954E+00	1.9431E+00	2.0028E+00
Z	1.5066E+00	1.8741E+00	1.9655E+00
GAME	9.1707E-01	9.7016E-01	9.3805E-01
U	1.7364E+01	2.9325E+00	3.0145E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.4832E+02	6.0609E+03	8.4067E+03
T	1.7751E+01	3.3561E+01	3.8171E+01
RHO	-1.6159E+01	9.3939E+01	1.0915E+02
M	-5.4478E-01	-1.8687E+00	-2.3834E+00
A	5.0663E+00	7.8432E+00	8.4641E+00
S	1.8309E+00	1.9777E+00	2.0381E+00
Z	1.5629E+00	1.9225E+00	2.0178E+00
GAME	9.2516E-01	9.5344E-01	9.3014E-01
U	1.8050E+01	3.1085E+00	3.1365E+00

SPECIES	MOLE FRACTIONS		
E-	4.2582E-07	1.4581E-04	5.0435E-04
O	1.5928E-01	4.0941E-01	4.5220E-01
O+	1.5387E-08	6.3454E-05	2.0551E-04
O++	3.7523E-36	1.4358E-19	4.7797E-17
O-	4.4214E-07	2.3220E-04	6.5541E-04
O2	1.7700E-01	5.6746E-02	3.8707E-02
O2+	1.2421E-06	1.0991E-04	1.6701E-04
O2-	4.7829E-07	9.8167E-05	1.1380E-04
C	1.2964E-06	6.8956E-03	2.9371E-02
C+	3.7742E-11	2.6163E-05	2.1234E-04
C++	2.9507E-29	2.5480E-15	3.6246E-13
C-	2.0491E-12	2.7921E-06	3.1158E-05
CO	5.1269E-01	5.0845E-01	4.6624E-01
CO+	8.5726E-08	2.5944E-04	7.1986E-04
CO2	1.5103E-01	1.7482E-02	9.7653E-03
C2	2.5783E-10	1.8183E-04	1.1002E-03

SPECIES	MOLE FRACTIONS		
E-	8.2914E-07	2.8582E-04	7.9066E-04
O	1.9607E-01	4.3547E-01	4.7093E-01
O+	4.2775E-08	1.1722E-04	3.0781E-04
O++	1.9700E-34	2.6797E-18	3.2840E-16
O-	8.6870E-07	3.8323E-04	9.2215E-04
O2	1.6436E-01	4.4016E-02	3.3414E-02
O2+	2.1924E-06	1.2920E-04	1.8983E-04
O2-	7.4530E-07	7.4090E-05	1.3788E-04
C	3.2179E-06	1.5355E-02	4.6712E-02
C+	1.7110E-10	8.2020E-05	4.1950E-04
C++	8.6599E-28	3.3632E-14	1.8457E-12
C-	8.6283E-12	9.7728E-06	6.7420E-05
CO	5.2424E-01	4.9100E-01	4.3554E-01
CO+	2.0783E-07	4.2448E-04	1.0010E-03
CO2	1.1531E-01	1.2249E-02	7.4953E-03
C2	9.6097E-10	4.0792E-04	2.0684E-03

P1 = 1.00E+05 N/SQ-M, US1= 5.40E+03 M/SEC

P1 = 1.00E+05 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8305E+02	6.4525E+03	8.9621E+03
T	1.8636E+01	3.5550E+01	3.9937E+01
RHO	1.5989E+01	9.2181E+01	1.0827E+02
M	-6.6575E-01	-2.0907E+00	-2.4453E+00
A	5.3120E+00	8.1094E+00	8.7601E+00
S	1.8661E+00	2.0112E+00	2.0731E+00
Z	1.6212E+00	1.9690E+00	2.0726E+00
GAME	9.3400E-01	9.3949E-01	9.2710E-01
U	1.8732E+01	3.2543E+00	3.2524E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.1892E+02	6.8340E+03	9.4863E+03
T	1.9594E+01	3.7322E+01	4.1579E+01
RHO	1.5762E+01	9.0773E+01	1.0711E+02
M	-7.9122E-01	-2.3207E+00	-2.9141E+00
A	5.5743E+00	8.3735E+00	9.0613E+00
S	1.9007E+00	2.0444E+00	2.1079E+00
Z	1.6802E+00	2.0172E+00	2.1300E+00
GAME	9.4382E-01	9.3130E-01	9.2712E-01
U	1.9407E+01	3.3754E+00	3.3575E+00

SPECIES	MOLE FRACTIONS		
E-	1.5833E-06	4.8909E-04	1.1374E-03
O	2.3592E-01	4.5569E-01	4.8790E-01
O+	1.1517E-07	1.8813E-04	4.3162E-04
O++	1.0087E-32	2.6025E-17	1.6064E-15
O-	1.6325E-06	5.7086E-04	1.2165E-03
O2	1.4750E-01	3.6121E-02	2.9903E-02
O2+	3.7104E-06	1.4626E-04	2.1413E-04
O2-	1.1041E-06	9.0523E-05	1.6207E-04
C	8.2533E-06	2.8051E-02	6.5994E-02
C+	7.4469E-10	1.9420E-04	7.0994E-04
C++	2.5319E-26	2.4341E-13	6.8102E-12
C-	3.5206E-11	2.5651E-05	1.2190E-04
CO	5.3037E-01	4.6777E-01	4.0176E-01
CO+	4.9332E-07	6.4754E-04	1.2822E-03
CO2	8.6198E-02	9.0951E-03	5.9115E-03
C2	3.5405E-09	9.4497E-04	3.2468E-03

SPECIES	MOLE FRACTIONS		
E-	2.9877E-06	7.5205E-04	1.5462E-03
O	2.7763E-01	4.7304E-01	5.0380E-01
O+	3.0205E-07	2.7522E-04	5.8091E-04
O++	6.1993E-31	1.6046E-16	6.3025E-15
O-	2.9507E-06	7.8653E-04	1.5347E-03
O2	1.2744E-01	3.1097E-02	2.7340E-02
O2+	6.0255E-06	1.6319E-04	2.4032E-04
O2-	1.5486E-06	1.0722E-04	1.8588E-04
C	2.1154E-05	4.4020E-02	8.6180E-02
C+	3.4380E-09	3.7449E-04	1.0865E-03
C++	8.2970E-25	1.1474E-12	2.0388E-11
C-	1.4160E-10	5.3804E-05	1.9518E-04
CO	5.3195E-01	4.3964E-01	3.6653E-01
CO+	1.1561E-06	8.8670E-04	1.5542E-03
CO2	6.2942E-02	7.0385E-03	4.7204E-03
C2	1.3139E-08	1.7451E-03	4.5060E-03

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.4990E+02	7.1967E+03	9.9735E+03
T	2.061E+01	3.8919E+01	4.3142E+01
RHO	1.5480E+01	8.9419E+01	1.0538E+02
H	-9.2117E-01	-2.5481E+00	-3.1902E+00
A	5.8558E+00	8.6407E+00	9.3682E+00
S	1.9347E+00	2.0775E+00	2.1426E+00
Z	1.7390E+00	2.0680E+00	2.1895E+00
GAME	9.5487E-01	9.2768E-01	9.2910E-01
U	2.0075E+01	3.4811E+00	3.4578E+00

SPECIES	MOLE FRACTIONS		
E-	5.6320E-06	1.0690E-03	2.0224E-03
O	3.1974E-01	4.8889E-01	5.1878E-01
O+	7.7494E-07	3.7882E-04	7.6064E-04
O++	3.0376E-29	7.2338E-16	2.1302E-14
O-	5.1780E-06	1.0227E-03	1.8741E-03
O2	1.0544E-01	2.7709E-02	2.5300E-02
O2+	9.3838E-06	1.8092E-04	2.6838E-04
O2-	2.0644E-06	1.2381E-04	2.0872E-04
C	5.4847E-05	6.1951E-02	1.0654E-01
C+	1.5545E-08	6.2566E-04	1.5524E-03
C++	2.4507E-23	4.0154E-12	5.2966E-11
C-	5.6882E-10	9.5741E-05	2.8681E-04
CO	5.3002E-01	4.0870E-01	3.3109E-01
CO+	2.6957E-06	1.1258E-03	1.8106E-03
CO2	4.4717E-02	5.5929E-03	3.7821E-03
C2	4.9815E-08	2.7301E-03	5.7263E-03

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9390E+02	7.5300E+03	1.0415E+04
T	2.1840E+01	4.0394E+01	4.4674E+01
RHO	1.5140E+01	8.7879E+01	1.0354E+02
H	-1.0556E+00	-2.8024E+00	-3.4738E+00
A	6.1598E+00	8.0175E+00	9.6845E+00
S	1.9680E+00	2.1175E+00	2.1774E+00
Z	1.7961E+00	2.1175E+00	2.2515E+00
GAME	9.6728E-01	9.2717E-01	9.3244E-01
U	2.0735E+01	3.5782E+00	3.5773E+00

SPECIES	MOLE FRACTIONS		
E-	1.0793E-05	1.4401E-03	2.5831E-03
O	3.6053E-01	5.0381E-01	5.3303E-01
O+	1.9628E-06	6.0138E-04	9.7958E-04
O++	1.5143E-27	2.6423E-15	6.5401E-14
O-	8.9065E-06	1.2757E-03	2.2358E-03
O2	8.2923E-02	2.5224E-02	2.3517E-02
O2+	1.3972E-05	1.9971E-04	2.9830E-04
O2-	2.6297E-06	1.3990E-04	2.2999E-04
C	1.4696E-04	8.0886E-02	1.2685E-01
C+	7.3357E-08	9.4967E-04	2.1197E-03
C++	7.6547E-22	1.1509E-11	1.2551E-10
C-	2.3680E-09	1.5190E-04	3.9701E-04
CO	5.2563E-01	3.7576E-01	2.9588E-01
CO+	6.3228E-06	1.3569E-03	2.0483E-03
CO2	3.0724E-02	4.5030E-03	3.0131E-03
C2	1.9955E-07	3.8019E-03	6.8231E-03

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3289E+02	7.8261E+03	1.0802E+04
T	2.3208E+01	4.1789E+01	4.6200E+01
RHO	1.4745E+01	8.6026E+01	1.0098E+02
H	-1.1944E+00	-3.0531E+00	-3.7648E+00
A	6.4865E+00	9.1897E+00	1.0011E+01
S	2.0003E+00	2.1438E+00	2.2125E+00
Z	1.8495E+00	2.1770E+00	2.3155E+00
GAME	9.8022E-01	9.2830E-01	9.3678E-01
U	2.1386E+01	3.6714E+00	3.6582E+00

SPECIES	MOLE FRACTIONS		
E-	2.1484E-05	1.8706E-03	3.2463E-03
O	3.9799E-01	5.1804E-01	5.4649E-01
O+	4.9214E-06	6.4640E-04	1.2471E-03
O++	8.4969E-26	8.3747E-13	1.8776E-13
O-	1.5298E-05	1.5434E-03	2.6181E-03
O2	6.1500E-02	2.3241E-02	2.1863E-02
O2+	1.9727E-05	2.1952E-04	3.2977E-04
O2-	3.2291E-06	1.5503E-04	2.4893E-04
C	4.1533E-04	1.0024E-01	1.4678E-01
C+	3.6634E-07	1.3501E-03	2.7995E-03
C++	2.7511E-20	2.8813E-11	2.7897E-10
C-	1.0618E-08	2.2210E-04	5.2485E-04
CO	5.1973E-01	3.4239E-01	2.6130E-01
CO+	1.5006E-05	1.5750E-03	2.2618E-03
CO2	2.0288E-02	3.6394E-03	2.3750E-03
C2	8.7223E-07	4.8685E-03	7.7200E-03

 $P_1 = 1.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7284E+02	8.0855E+03	1.1140E+04
T	2.4797E+01	4.3138E+01	4.7748E+01
RHO	1.4308E+01	8.3868E+01	9.7984E+01
H	-1.3373E+00	-3.3101E+00	-4.0636E+00
A	6.8218E+00	9.4735E+00	1.0348E+01
S	2.0313E+00	2.1772E+00	2.2476E+00
Z	1.8964E+00	2.2348E+00	2.3811E+00
GAME	9.8960E-01	9.3092E-01	9.4184E-01
U	2.2027E+01	3.7640E+00	3.7626E+00

SPECIES	MOLE FRACTIONS		
E-	4.5038E-05	2.3698E-03	4.0379E-03
O	4.2984E-01	5.3162E-01	5.5905E-01
O+	1.2020E-05	8.1949E-04	1.5765E-03
O++	4.6019E-24	2.4081E-14	5.1607E-13
O-	2.8533E-05	1.8250E-03	3.0210E-03
O2	4.2978E-02	2.1548E-02	2.0269E-02
O2+	2.6027E-05	2.4035E-04	3.6275E-04
O2-	3.8704E-06	1.6892E-04	2.6503E-04
C	1.2362E-03	1.1961E-01	1.6613E-01
C+	1.9004E-06	1.8328E-03	3.6074E-03
C++	1.0115E-18	6.5679E-11	5.9118E-10
C-	5.1668E-08	3.0599E-04	6.6948E-04
CO	5.1290E-01	3.0909E-01	2.2835E-01
CO+	3.5546E-05	1.7771E-03	2.4468E-03
CO2	1.2888E-02	2.9347E-03	1.8446E-03
C2	4.1429E-06	5.8546E-03	8.3656E-03

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 6.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1382E+02	8.3321E+03	1.1465E+04
T	2.6569E+01	4.4478E+01	4.9358E+01
RHO	1.3883E+01	8.1646E+01	9.4893E+01
H	-1.4852E+00	-3.5735E+00	-4.3710E+00
A	7.1199E+00	9.7657E+00	1.0699E+01
S	2.0615E+00	2.2105E+00	2.2828E+00
Z	1.9353E+00	2.2944E+00	2.4478E+00
GAME	9.8590E-01	9.3453E-01	9.4735E-01
U	2.2663E+01	3.8595E+00	3.8728E+00

SPECIES	MOLE FRACTIONS		
E-	9.7014E-05	2.9497E-03	4.9913E-03
O	4.5424E-01	5.4447E-01	5.7055E-01
O+	2.7212E-05	1.0272E-03	1.9873E-03
O++	2.0953E-22	6.5030E-14	1.3902E-12
O-	4.5982E-05	2.1231E-03	3.4498E-03
O2	2.9089E-02	2.0052E-02	1.8724E-02
O2+	3.1638E-05	2.6263E-04	3.9800E-04
O2-	4.5904E-06	1.8184E-04	2.7873E-04
C	3.6538E-03	1.3871E-01	1.8463E-01
C+	9.3224E-06	2.4062E-03	4.5634E-03
C++	3.2710E-17	1.4049E-10	1.2215E-09
C-	2.5489E-07	4.0356E-04	8.3077E-04
CO	5.0462E-01	2.7640E-01	1.9685E-01
CO+	7.9695E-05	1.9622E-03	2.6020E-03
CO2	8.0866E-03	2.3542E-03	1.4088E-03
C2	1.9652E-05	6.7071E-03	8.7342E-03

P1 = 1.00E+05 N/SQ-M, US1= 6.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5627E+02	8.6288E+03	1.1874E+04
T	2.8335E+01	4.5867E+01	5.1124E+01
RHO	1.3560E+01	7.9870E+01	9.2350E+01
H	-1.6574E+00	-3.8463E+00	-4.6950E+00
A	7.3422E+00	1.0072E+01	1.1071E+01
S	2.0902E+00	2.2434E+00	2.3179E+00
Z	1.9684E+00	2.3554E+00	2.5156E+00
GAME	9.6660E-01	9.3895E-01	9.5304E-01
U	2.3306E+01	3.9631E+00	4.0110E+00

SPECIES	MOLE FRACTIONS		
E-	1.9678E-04	3.6304E-03	6.1701E-03
O	4.7154E-01	5.5646E-01	5.8089E-01
O+	5.3051E-05	1.2828E-03	2.5201E-03
O++	5.3847E-21	1.7183E-13	3.8395E-12
O-	7.5953E-05	2.4499E-03	3.9291E-03
O2	2.0372E-02	1.8732E-02	1.7243E-02
O2+	3.9692E-05	2.8805E-04	4.3879E-04
O2-	5.4292E-06	1.9522E-04	2.9223E-04
C	9.3723E-03	1.5735E-01	2.0225E-01
C+	3.5878E-05	3.0868E-03	5.7136E-03
C++	6.2888E-16	2.9094E+10	2.5556E-09
C-	1.0562E-06	5.1708E-04	1.0142E-03
CO	4.9277E-01	2.4459E-01	1.6692E-01
CO+	1.5459E-04	2.1349E-03	2.7330E-03
CO2	5.9093E-03	1.8763E-03	1.0531E-03
C2	7.6214E-05	7.4041E-03	8.8299E-03

P1 = 1.00E+05 N/SQ-M, US1= 7.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.0052E+02	9.0173E+03	1.2419E+04
T	2.9887E+01	4.7353E+01	5.3080E+01
RHO	1.3386E+01	7.8775E+01	9.0595E+01
H	-1.7944E+00	-4.1302E+00	-5.0338E+00
A	7.5223E+00	1.0395E+01	1.1461E+01
S	2.1180E+00	2.2757E+00	2.3524E+00
Z	2.0009E+00	2.4173E+00	2.5826E+00
GAME	9.4620E-01	9.4400E-01	9.5827E-01
U	2.3967E+01	4.0789E+00	4.1547E+00

SPECIES	MOLE FRACTIONS		
E-	3.4954E-04	4.4370E-03	7.6230E-03
O	4.8455E-01	5.6749E-01	5.8967E-01
O+	8.7241E-05	1.6037E-03	3.2148E-03
O++	6.4790E-20	4.5721E-13	1.0929E-11
O-	1.1500E-04	2.8171E-03	4.4669E-03
O2	1.5514E-02	1.7558E-02	1.5847E-02
O2+	3.8589E-05	3.1810E-04	4.8675E-04
O2-	6.3896E-06	2.0997E-04	3.0624E-04
C	1.9139E-02	1.7531E-01	2.1842E-01
C+	9.8141E-05	3.8942E-03	7.0766E-03
C++	5.8996E-15	5.9545E-10	5.3003E-09
C-	3.2141E-06	6.4922E-04	1.2193E-03
CO	4.7585E-01	2.1401E-01	1.3940E-01
CO+	2.5017E-04	2.2973E-03	2.8373E-03
CO2	3.7893E-03	1.4826E-03	7.7212E-04
C2	2.1199E-04	7.9247E-03	8.6514E-03

P1 = 1.00E+05 N/SQ-M, US1= 7.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.4656E+02	9.4899E+03	1.3093E+04
T	3.1202E+01	4.8955E+01	5.5253E+01
RHO	1.3328E+01	7.8174E+01	8.9491E+01
H	-1.9562E+00	-4.4251E+00	-5.3891E+00
A	7.6981E+00	1.0736E+01	1.1866E+01
S	2.1453E+00	2.3075E+00	2.3862E+00
Z	2.0357E+00	2.4797E+00	2.6480E+00
GAME	9.3300E-01	9.4944E-01	9.6231E-01
U	2.4643E+01	4.2077E+00	4.3115E+00

SPECIES	MOLE FRACTIONS		
E-	5.4662E-04	5.4018E-03	9.4282E-03
O	4.9575E-01	5.7746E-01	5.9675E-01
O+	1.2650E-04	2.0100E-03	4.1263E-03
O++	4.2646E-19	1.2279E-12	3.2057E-11
O-	1.6044E-04	3.2284E-03	5.0643E-03
O2	1.2786E-02	1.6465E-02	1.4499E-02
O2+	4.1127E-05	3.9309E-04	5.4226E-04
O2-	7.4521E-06	2.2567E-04	3.1975E-04
C	3.2070E-02	1.9237E-01	2.3286E-01
C+	2.0304E-04	4.8487E-03	8.6788E-03
C++	3.1012E-14	1.2108E-09	1.1172E-08
C-	7.4072E-06	8.0086E-04	1.4432E-03
CO	4.3460E-01	1.8500E-01	1.1462E-01
CO+	3.5125E-04	2.4454E-03	2.9080E-03
CO2	2.9090E-03	1.1567E-03	5.5329E-04
C2	4.4082E-04	8.2379E-03	8.2069E-03

TABLE I.-Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad U_1 = 7.40\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.9425E+02	1.0022E+04	1.3864E+04
T	3.2336E+01	5.0680E+01	5.7636E+01
RHO	1.3339E+01	7.7800E+01	8.8743E+01
M	-2.1228E+00	-4.7302E+00	-5.7596E+00
A	7.8782E+00	1.1091E+01	1.2274E+01
S	2.1722E+00	2.3387E+00	2.4195E+00
Z	2.0732E+00	2.5419E+00	2.7105E+00
GAME	9.2580E-01	9.5491E-01	9.6436E-01
U	2.5329E+01	4.3490E+00	4.4794E+00

SPECIES	MOLE FRACTIONS		
E-	7.7982E-04	6.5644E-03	1.1659E-02
O	5.0629E-01	5.8628E-01	6.0196E-01
O+	1.6979E-04	2.5255E-03	5.3110E-03
O++	1.9071E-18	3.3301E-12	9.5122E-11
O-	2.1090E-04	3.6820E-03	5.7070E-03
O2	1.1127E-02	1.5395E-02	1.3184E-02
O2+	4.3747E-05	3.9276E-04	6.0416E-04
O2-	8.6015E-06	2.4121E-04	3.3095E-04
C	4.6952E-02	2.0828E-01	2.4524E-01
C+	3.4965E-04	5.9680E-03	1.0521E-02
C++	1.1197E-13	2.4512E-09	2.3503E-08
C-	1.4052E-05	9.7082E-04	1.6763E-03
CO	4.3052E-01	1.9793E-01	9.2951E-02
CO+	4.5019E-04	2.5721E-03	2.9366E-03
CO2	2.3421E-03	8.8729E-04	3.8761E-04
C2	7.5032E-04	8.3176E-03	7.5306E-03

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad U_1 = 7.80\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.9409E+02	1.1199E+04	1.5593E+04
T	3.4286E+01	5.4528E+01	6.2934E+01
RHO	1.3451E+01	7.7138E+01	8.7786E+01
M	-2.4698E+00	-5.3676E+00	-6.5400E+00
A	8.2504E+00	1.1829E+01	1.3068E+01
S	2.2257E+00	2.4000E+00	2.4843E+00
Z	2.1556E+00	2.6624E+00	2.8225E+00
GAME	9.2100E-01	9.6386E-01	9.6135E-01
U	2.6716E+01	4.6646E+00	4.8325E+00

SPECIES	MOLE FRACTIONS		
E-	1.3437E-03	9.6795E-03	1.7607E-02
O	5.2657E-01	5.9996E-01	6.0650E-01
O+	2.7077E-04	4.0101E-03	8.7086E-03
O++	1.9862E-17	2.4861E-11	8.0172E-10
O-	3.2586E-04	4.6995E-03	7.0336E-03
O2	9.2451E-03	1.3231E-02	1.0706E-02
O2+	4.9794E-05	4.8465E-04	7.3970E-04
O2-	1.1130E-05	2.6770E-04	3.4137E-04
C	7.9451E-02	2.3571E-01	2.6308E-01
C+	7.6098E-04	8.7690E-03	1.4792E-02
C++	7.7351E-13	9.8830E-09	9.8434E-08
C-	3.5685E-05	1.3528E-03	2.1152E-03
CO	3.7814E-01	1.1084E-01	5.9563E-02
CO+	6.3485E-04	2.7357E-03	2.8567E-03
CO2	1.6353E-03	4.9176E-04	1.8118E-04
C2	1.5245E-03	7.7668E-03	5.7798E-03

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad U_1 = 7.60\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4345E+02	1.0596E+04	1.4703E+04
T	3.3350E+01	5.2535E+01	6.0208E+01
RHO	1.3386E+01	7.7483E+01	8.8196E+01
M	-2.2940E+00	-5.0445E+00	-6.1438E+00
A	8.0625E+00	1.1457E+01	1.2677E+01
S	2.1990E+00	2.3696E+00	2.4522E+00
Z	2.1133E+00	2.4031E+00	2.7689E+00
GAME	9.2229E-01	9.5991E-01	9.6399E-01
U	2.6021E+01	4.5019E+00	4.6548E+00

SPECIES	MOLE FRACTIONS		
E-	1.0456E-03	7.9723E-03	1.4375E-02
O	5.1652E-01	5.9382E-01	6.0520E-01
O+	2.1754E-04	3.1802E-03	6.8237E-03
O++	6.6645E-18	9.0949E-12	2.8024E-10
O-	2.6602E-04	4.1743E-03	6.3726E-03
O2	1.0029E-02	1.4319E-02	1.1912E-02
O2+	4.6616E-05	4.3675E-04	6.7069E-04
O2-	9.8293E-06	2.5553E-04	3.3841E-04
C	6.2924E-02	2.2280E-01	2.5533E-01
C+	5.3589E-04	7.2708E-03	1.2578E-02
C++	3.1810E-13	4.9388E-09	4.8757E-08
C-	2.3412E-05	1.1563E-03	1.9052E-03
CO	4.0477E-01	1.3312E-01	7.4614E-02
CO+	5.4481E-04	2.6707E-03	2.9180E-03
CO2	1.9407E-03	6.6739E-04	2.6653E-04
C2	1.1189E-03	8.1558E-03	6.6921E-03

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad U_1 = 8.00\text{E}+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0461E+03	1.1823E+04	1.6521E+04
T	3.5175E+01	5.6660E+01	6.5772E+01
RHO	1.3521E+01	7.6745E+01	8.7488E+01
M	-2.6502E+00	-5.6992E+00	-6.9471E+00
A	8.4421E+00	1.2200E+01	1.3444E+01
S	2.2524E+00	2.4299E+00	2.5157E+00
Z	2.1997E+00	2.7190E+00	2.8710E+00
GAME	9.2113E-01	9.6616E-01	9.5718E-01
U	2.7412E+01	4.8324E+00	5.0093E+00

SPECIES	MOLE FRACTIONS		
E-	1.6761E-03	1.1742E-02	2.1353E-02
O	5.3643E-01	6.0457E-01	6.0598E-01
O+	3.3079E-04	5.0566E-03	1.0992E-02
O++	5.3279E-17	6.7795E-11	2.1886E-09
O-	3.9066E-04	5.2488E-03	7.6622E-03
O2	8.6477E-03	1.2141E-02	9.5878E-03
O2+	5.3308E-05	5.5594E-04	8.0881E-04
O2-	1.2496E-05	2.7698E-04	3.3971E-04
C	9.6194E-02	2.4680E-01	2.6864E-01
C+	1.0257E-03	1.0465E-02	1.7091E-02
C++	1.6945E-12	1.9597E-08	1.9138E-07
C-	5.1052E-05	1.5535E-03	2.2933E-03
CO	3.5113E-01	9.1299E-02	4.7501E-02
CO+	7.2051E-04	2.7636E-03	2.7566E-03
CO2	1.3904E-03	3.5529E-04	1.2269E-04
C2	1.9469E-03	7.1880E-03	4.8763E-03

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0995E+03	1.2459E+04	1.7475E+04
T	3.6031E+01	5.8922E+01	6.8681E+01
RHO	1.3589E+01	7.6279E+01	8.7286E+01
M	-2.8352E+00	-6.0387E+00	-7.3639E+00
A	8.6381E+00	1.2564E+01	1.3809E+01
S	2.2792E+00	2.4595E+00	2.5464E+00
Z	2.2455E+00	2.7721E+00	2.9150E+00
GAME	9.2224E-01	9.6643E-01	9.5243E-01
U	2.8109E+01	5.0147E+00	5.1818E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.0463E-03	1.4206E-02	2.5582E-02
O	5.4608E-01	6.0759E-01	6.0386E-01
O+	3.9919E-04	6.3599E-03	1.3680E-02
O++	1.3318E-16	1.8223E-10	5.6342E-09
O-	4.6072E-04	5.8076E-03	8.2342E-03
O2	8.1653E-03	1.1066E-02	8.5688E-03
O2+	5.7174E-05	5.8960E-04	8.7564E-04
O2-	1.3922E-05	2.8275E-04	3.3375E-04
C	1.1293E-01	2.5595E-01	2.7230E-01
C+	1.3323E-02	1.2343E-02	1.9397E-02
C++	3.4531E-12	3.8239E-08	3.5606E-07
C-	6.9686E-05	1.7494E-03	2.4313E-03
CO	3.2408E-01	7.4572E-02	3.7978E-02
CO+	8.0201E-04	2.7530E-03	2.6277E-03
CO2	1.1866E-03	2.5252E-04	8.3310E-05
C2	2.3686E-03	6.4749E-03	4.0415E-03

P1 = 1.00E+05 N/SQ-M, US1= 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1541E+03	1.3110E+04	1.8449E+04
T	3.6875E+01	6.1303E+01	7.1633E+01
RHO	1.3651E+01	7.5798E+01	8.7154E+01
M	-3.0248E+00	-6.3864E+00	-7.7898E+00
A	8.8391E+00	1.2917E+01	1.4165E+01
S	2.3060E+00	2.4889E+00	2.5765E+00
Z	2.2927E+00	2.8213E+00	2.9551E+00
GAME	9.2412E-01	9.6469E-01	9.4788E-01
U	2.8805E+01	5.1950E+00	5.3487E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4594E-03	1.7106E-02	3.0252E-02
O	5.5550E-01	6.0901E-01	6.0039E-01
O+	4.7784E-04	7.9597E-03	1.6766E-02
O++	3.1447E-16	4.7850E-10	1.2617E-08
O-	5.3642E-04	6.3616E-03	8.7321E-03
O2	7.7560E-03	1.0037E-02	7.6487E-03
O2+	6.1411E-05	6.4478E-04	9.3809E-04
O2-	1.5397E-05	2.8494E-04	3.2402E-04
C	1.2951E-01	2.6314E-01	2.7443E-01
C+	1.6843E-02	1.4373E-02	2.1649E-02
C++	6.6721E-12	7.3030E-08	6.3286E-07
C-	9.1770E-05	1.9317E-03	2.5258E-03
CO	2.9725E-01	6.0578E-02	3.0501E-02
CO+	8.7943E-04	2.7067E-03	2.4792E-03
CO2	1.0128E-03	1.7740E-04	5.6955E-04
C2	2.7742E-03	5.4924E-03	3.3068E-03

P1 = 1.00E+05 N/SQ-M, US1= 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2101E+03	1.3768E+04	1.9436E+04
T	3.7717E+01	6.3795E+01	7.4609E+01
RHO	1.3703E+01	7.5281E+01	8.7067E+01
M	-3.2189E+00	-6.7422E+00	-8.2247E+00
A	9.0458E+00	1.3260E+01	1.4517E+01
S	2.3328E+00	2.5173E+00	2.6060E+00
Z	2.3412E+00	2.8667E+00	2.9921E+00
GAME	9.2664E-01	9.6135E-01	9.4400E-01
U	2.9500E+01	5.3792E+00	5.5097E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.9223E-03	2.0484E-02	3.5322E-02
O	5.6463E-01	6.0891E-01	5.9578E-01
O+	5.6914E-04	9.8998E-03	2.0236E-02
O++	7.2324E-16	1.2211E-09	2.0931E-08
O-	6.1818E-04	6.8954E-03	9.1451E-03
O2	7.3917E-03	9.0493E-03	6.8202E-03
O2+	6.6043E-05	7.0034E-04	9.9443E-04
O2-	1.6910E-05	2.8340E-04	3.1113E-04
C	1.4581E-01	2.6850E-01	2.7535E-01
C+	2.0870E-03	1.6526E-02	2.3804E-02
C++	1.2435E-11	1.3617E-07	1.0768E-06
C-	1.1749E-04	2.0919E-03	2.5779E-03
CO	2.7081E-01	4.9015E-02	2.4619E-02
CO+	9.5272E-04	2.6280E-03	2.3190E-03
CO2	8.6183E-04	1.2348E-04	3.9262E-05
C2	3.1499E-03	4.8941E-03	2.6813E-03

P1 = 1.00E+05 N/SQ-M, US1= 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2672E+03	1.4434E+04	2.0427E+04
T	3.8568E+01	6.6322E+01	7.7594E+01
RHO	1.3743E+01	7.4853E+01	8.6977E+01
M	-3.4176E+00	-7.1060E+00	-8.6676E+00
A	9.2591E+00	1.3586E+01	1.4866E+01
S	2.3597E+00	2.5452E+00	2.6350E+00
Z	2.3909E+00	2.9076E+00	3.0268E+00
GAME	9.2974E-01	9.5717E-01	9.4102E-01
U	3.0192E+01	5.5507E+00	5.6653E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.4438E-03	2.4240E-02	4.0749E-02
O	5.7344E-01	6.0741E-01	5.9023E-01
O+	6.7603E-04	1.2149E-02	2.4063E-02
O++	1.6228E-15	2.9444E-09	6.6201E-08
O-	7.0640E-04	7.3850E-03	9.4657E-03
O2	7.0540E-03	8.1582E-03	6.0741E-03
O2+	7.1090E-05	7.5426E-04	1.0430E-03
O2-	1.8445E-05	2.7895E-04	2.9563E-04
C	1.6173E-01	2.7211E-01	2.7533E-01
C+	2.5470E-03	1.8695E-02	2.5838E-02
C++	2.2589E-11	2.4341E-07	1.7590E-06
C-	1.4703E-04	2.2214E-03	2.5912E-03
CO	2.4494E-01	3.9829E-02	1.9973E-02
CO+	1.0216E-03	2.5268E-03	2.1534E-03
CO2	7.2923E-04	8.6424E-05	2.7307E-05
C2	3.4835E-03	4.1516E-03	2.1612E-03

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3256E+03	1.5103E+04	2.1421E+04
T	3.9437E+01	6.8911E+01	8.0593E+01
RHD	1.3768E+01	7.4406E+01	8.6863E+01
H	-3.6207E+00	-7.4777E+00	-9.1194E+00
A	9.4800E+00	1.3906E+01	1.5217E+01
S	2.3865E+00	2.5729E+00	2.6635E+00
Z	2.4414E+00	2.9455E+00	3.0599E+00
GAME	9.3340E-01	9.5275E-01	9.3900E-01
U	3.0883E+01	5.7229E+00	5.8167E+00

SPECIES	MOLE FRACTIONS		
E-	4.0355E-03	2.8440E-02	4.6515E-02
O	5.8188E-01	6.0468E-01	5.8387E-01
O+	8.0238E-04	1.4761E-02	2.8234E-02
O++	3.5894E-15	6.8040E-09	1.3445E-07
D-	8.0166E-04	7.8242E-03	9.6932E-03
O2	6.7301E-03	7.3340E-03	5.3993E-03
O2+	7.6593E-05	8.0578E-04	1.0829E-03
O2-	1.9985E-05	2.7147E-04	2.7807E-04
C	1.7719E-01	2.743E-01	2.7460E-01
C+	3.0730E-03	2.0881E-02	2.7748E-02
C++	4.0313E-11	4.2160E-07	2.7740E-06
C-	1.8061E-04	2.3185E-03	2.5708E-03
CO	2.1975E-01	3.2392E-02	1.6268E-02
CO+	1.0858E-03	2.4061E-03	1.9869E-03
CO2	6.1210E-04	6.0480E-05	1.9133E-05
C2	3.7642E-03	3.4714E-03	1.7343E-03

P1 = 1.00E+05 N/SQ-M, US1= 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4460E+03	1.6432E+04	2.3388E+04
T	4.1274E+01	7.4164E+01	8.6633E+01
RHD	1.3768E+01	7.3517E+01	8.6429E+01
H	-4.0406E+00	-8.2443E+00	-1.0049E+01
A	9.9490E+00	1.4534E+01	1.5929E+01
S	2.4403E+00	2.6273E+00	2.7194E+00
Z	2.5446E+00	3.0138E+00	3.1236E+00
GAME	9.4246E-01	9.4508E-01	9.3768E-01
U	3.2256E+01	6.0517E+00	6.1116E+00

SPECIES	MOLE FRACTIONS		
E-	5.4948E-03	3.7980E-02	5.8990E-02
O	5.9747E-01	5.9615E-01	5.6912E-01
O+	1.1355E-03	2.1013E-02	3.7518E-02
O++	1.7580E-14	3.1293E-08	4.8420E-07
D-	1.0157E-03	8.5083E-03	9.8703E-03
O2	6.0875E-03	5.9032E-03	4.2309E-03
O2+	8.9141E-05	8.9604E-04	1.1336E-03
O2-	2.2987E-05	2.4963E-04	2.3876E-04
C	2.0638E-01	2.7560E-01	2.7155E-01
C+	4.3717E-03	2.5107E-02	3.1220E-02
C++	1.2572E-10	1.1381E-06	6.3148E-06
C-	2.6067E-04	2.4127E-03	2.4501E-03
CO	1.7193E-01	2.1658E-02	1.0883E-02
CO+	1.1978E-03	2.1324E-03	1.6642E-03
CO2	4.1668E-04	3.0099E-05	9.5504E-06
C2	4.1302E-03	2.3636E-03	1.1074E-03

P1 = 1.00E+05 N/SQ-M, US1= 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3852E+03	1.5769E+04	2.2410E+04
T	4.0336E+01	7.1533E+01	8.3604E+01
RHD	1.3777E+01	7.3956E+01	8.6690E+01
H	-3.8284E+00	-7.8571E+00	-9.5797E+00
A	9.7095E+00	1.4222E+01	1.5571E+01
S	2.4134E+00	2.6003E+00	2.6916E+00
Z	2.4927E+00	2.9807E+00	3.0920E+00
GAME	9.3763E-01	9.4861E-01	9.3790E-01
U	3.1571E+01	5.8917E+00	5.9650E+00

SPECIES	MOLE FRACTIONS		
E-	4.7126E-03	3.3039E-02	5.2599E-02
O	5.8991E-01	6.0087E-01	5.7681E-01
O+	9.5326E-04	1.7724E-02	3.2725E-02
O++	7.9215E-15	1.4972E-08	2.6051E-07
D-	9.0453E-04	8.2009E-03	9.8274E-03
O2	6.4103E-03	6.5823E-03	4.7872E-03
O2+	8.2593E-05	8.5342E-04	1.1133E-03
O2-	2.1508E-05	2.6149E-04	2.5896E-04
C	1.9210E-01	2.7544E-01	2.7330E-01
C+	3.6765E-03	2.3032E-02	2.9537E-02
C++	7.1289E-11	7.0523E-07	4.2414E-06
C-	2.1842E-04	2.3818E-03	2.5221E-03
CO	1.9537E-01	2.6426E-02	1.3292E-02
CO+	1.1447E-03	2.2725E-03	1.8230E-03
CO2	5.0836E-04	4.2507E-05	1.3487E-05
C2	3.9826E-03	2.8734E-03	1.3875E-03

P1 = 1.00E+05 N/SQ-M, US1= 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5079E+03	1.7088E+04	2.4349E+04
T	4.2264E+01	7.6797E+01	8.9684E+01
RHD	1.3740E+01	7.3069E+01	8.6055E+01
H	-4.2573E+00	-8.6391E+00	-1.0526E+01
A	1.0199E+01	1.4845E+01	1.6294E+01
S	2.4671E+00	2.6539E+00	2.7469E+00
Z	2.5967E+00	3.0452E+00	3.1550E+00
GAME	9.4790E-01	9.4229E-01	9.3829E-01
U	3.2937E+01	6.2026E+00	6.2575E+00

SPECIES	MOLE FRACTIONS		
E-	6.4079E-03	4.3232E-02	6.6808E-02
O	6.0448E-01	5.9064E-01	5.6088E-01
O+	1.3581E-03	2.4612E-02	4.2595E-02
O++	3.9442E-14	6.2297E-06	8.6761E-07
D-	1.1358E-03	8.7435E-03	9.8256E-03
O2	5.7565E-03	5.2894E-03	3.7248E-03
O2+	9.6303E-05	9.3273E-04	1.1435E-03
O2-	2.4389E-05	2.3628E-04	2.1791E-04
C	2.1991E-01	2.7503E-01	2.6943E-01
C+	5.1772E-03	2.7087E-02	3.2812E-02
C++	2.2219E-10	1.7768E-06	9.1903E-06
C-	3.0754E-04	2.4143E-03	2.3599E-03
CO	1.4956E-01	1.7830E-02	8.9226E-03
CO+	1.2440E-03	1.9896E-03	1.5122E-03
CO2	3.3615E-04	2.1476E-05	6.7829E-06
C2	4.2003E-03	1.9356E-03	8.8238E-04

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

P1 = 1.00E+05 N/SQ-M, US1= 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5709E+03	1.7730E+04	2.5286E+04
T	4.3320E+01	7.9442E+01	9.2762E+01
RHO	1.3690E+01	7.2564E+01	8.5546E+01
H	-4.4784E+00	-9.0413E+00	-1.1013E+01
A	1.0462E+01	1.5157E+01	1.6666E+01
S	2.4938E+00	2.6802E+00	2.7741E+00
Z	2.6487E+00	3.0756E+00	3.1865E+00
GAME	9.5395E-01	9.4027E-01	9.3967E-01
U	3.3614E+01	6.3465E+00	6.4040E+00

SPECIES	MOLE FRACTIONS		
E-	7.4863E-03	4.8807E-02	7.2664E-02
O	6.1088E-01	5.8443E-01	5.5211E-01
O+	1.6337E-03	2.8528E-02	4.7938E-02
O++	9.0169E-14	1.1900E-07	1.5054E-06
O-	1.2656E-03	8.9053E-03	9.6984E-03
O2	5.4135E-03	4.7292E-03	3.2645E-03
O2+	1.0415E-04	9.6277E-04	1.1432E-03
O2-	2.5678E-05	2.2165E-04	1.9686E-04
C	2.3257E-01	2.7389E-01	2.6699E-01
C+	6.1163E-03	2.8980E-02	3.4336E-02
C++	3.9581E-10	2.6985E-06	1.3118E-05
C-	3.5913E-04	2.3900E-03	2.2555E-03
CO	1.2841E-01	1.4717E-02	7.3183E-03
CO+	1.2826E-03	1.8464E-03	1.3681E-03
CO2	2.6611E-04	1.5398E-05	4.8249E-06
C2	4.1881E-03	1.578E-03	7.0204E-04

P1 = 1.00E+05 N/SQ-M, US1= 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7995E+03	1.9773E+04	2.8284E+04
T	4.7759E+01	8.8705E+01	1.0383E+02
RHO	1.3346E+01	7.0119E+01	8.2520E+01
H	-5.2872E+00	-1.0501E+01	-1.2784E+01
A	1.1482E+01	1.6272E+01	1.8045E+01
S	2.5857E+00	2.7708E+00	2.8677E+00
Z	2.8232E+00	3.1769E+00	3.3011E+00
GAME	9.7783E-01	9.3895E-01	9.4999E-01
U	3.5942E+01	6.8460E+00	6.9335E+00

SPECIES	MOLE FRACTIONS		
E-	1.3327E-02	7.0521E-02	9.9394E-02
O	6.2672E-01	5.5819E-01	5.1773E-01
O+	3.3256E-03	4.4405E-02	6.8514E-02
O++	2.0556E-12	8.5822E-07	8.4459E-06
O-	1.8039E-03	8.9081E-03	8.7028E-03
O2	4.1104E-03	3.1513E-03	1.9741E-03
O2+	1.3838E-04	1.0084E-03	1.0676E-03
O2-	2.8630E-05	1.6547E-04	1.2706E-04
C	2.6763E-01	2.6678E-01	2.5629E-01
C+	1.0929E-02	3.4942E-02	3.9438E-02
C++	3.3764E-09	9.6740E-06	4.0598E-05
C-	9.7445E-04	2.1557E-03	1.8295E-03
CO	6.6475E-02	7.6470E-03	3.6371E-03
CO+	1.3403E-03	1.3741E-03	9.3481E-04
CO2	9.7124E-05	4.9566E-06	1.4591E-06
C2	3.5022E-03	7.6112E-04	3.1255E-04

P1 = 1.00E+05 N/SQ-M, US1= 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6349E+03	1.8344E+04	2.6192E+04
T	4.4457E+01	8.2082E+01	9.5874E+01
RHO	1.3620E+01	7.1967E+01	8.4886E+01
H	-4.7040E+00	-9.4497E+00	-1.1508E+01
A	1.0738E+01	1.5471E+01	1.7047E+01
S	2.5204E+00	2.7064E+00	2.8011E+00
Z	2.7002E+00	3.1054E+00	3.2184E+00
GAME	9.6055E-01	9.3902E-01	9.4177E-01
U	3.4286E+01	6.4990E+00	6.5519E+00

SPECIES	MOLE FRACTIONS		
E-	8.7747E-03	5.4670E-02	7.9942E-02
O	6.1656E-01	5.7760E-01	5.4285E-01
O+	1.9796E-03	3.2730E-02	5.3532E-02
O++	2.1134E-13	2.1825E-07	2.5986E-06
O-	1.4059E-03	8.9921E-03	9.4948E-03
O2	5.0566E-03	4.2184E-03	2.8470E-03
O2+	1.1278E-04	9.8528E-04	1.1329E-03
O2-	2.6808E-05	2.0605E-04	1.7600E-04
C	2.4422E-01	2.7229E-01	2.6425E-01
C+	7.2183E-03	3.0782E-02	3.5814E-02
C++	7.1402E-10	3.9913E-06	1.8416E-05
C-	4.1548E-04	2.3433E-03	2.1408E-03
CO	1.0863E-01	1.2180E-02	6.0010E-03
CO+	1.3123E-03	1.7054E-03	1.2328E-03
CO2	2.0609E-04	1.1089E-05	3.4331E-06
C2	4.0911E-03	1.2841E-03	5.9785E-04

P1 = 1.00E+05 N/SQ-M, US1= 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9702E+03	2.1016E+04	3.0141E+04
T	5.1842E+01	9.5375E+01	1.1213E+02
RHO	1.2968E+01	6.7718E+01	7.9295E+01
H	-5.8979E+00	-1.1590E+01	-1.4117E+01
A	1.2255E+01	1.7104E+01	1.9122E+01
S	2.6490E+00	2.8339E+00	2.9335E+00
Z	2.9307E+00	3.2539E+00	3.3898E+00
GAME	9.8848E-01	9.4270E-01	9.6196E-01
U	3.7564E+01	7.2038E+00	7.3422E+00

SPECIES	MOLE FRACTIONS		
E-	2.0757E-02	8.7923E-02	1.2054E-01
O	6.2929E-01	5.5596E-01	4.9002E-01
O+	5.8654E-03	5.7532E-02	8.4719E-02
O++	2.3829E-11	2.8404E-06	2.4936E-05
O-	2.2527E-03	8.4520E-03	7.6280E-03
O2	3.1631E-03	2.2764E-03	1.3214E-03
O2+	1.7032E-04	9.8579E-04	9.5887E-04
O2-	2.8564E-05	1.2628E-04	8.6169E-05
C	2.8042E-01	2.5969E-01	2.4687E-01
C+	1.6451E-02	3.8759E-02	4.3182E-02
C++	1.7522E-08	2.1124E-05	8.4157E-05
C-	7.4276E-04	1.9080E-03	1.5140E-03
CO	3.6924E-02	4.8267E-03	2.1629E-03
CO+	1.2944E-03	1.0848E-03	6.9456E-04
CO2	3.9015E-05	2.2435E-06	6.1240E-07
C2	2.5960E-03	4.4974E-04	1.7429E-04

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_1 = 1.15\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1478E+03	2.2208E+04	3.1958E+04
T	5.6330E+01	1.0224E+02	1.2092E+02
RHO	1.2586E+01	6.5181E+01	7.5830E+01
H	-6.5365E+00	-1.2722E+01	-1.5515E+01
A	-1.2961E+01	1.1989E+01	2.0290E+01
S	-2.7094E+00	2.8955E+00	2.9972E+00
Z	-3.0189E+00	3.3324E+00	3.4854E+00
GAME	9.8428E-01	9.4978E-01	9.7680E-01
U	3.9172E+01	7.5759E+00	7.7813E+00

SPECIES	MOLE FRACTIONS		
E-	3.1832E-02	1.0669E-01	1.4305E-01
O	6.2321E-01	5.1134E-01	4.6025E-01
O+	1.0293E-02	7.1897E-02	1.0177E-01
O++	2.6392E-10	8.3079E-06	6.7065E-05
O-	2.6878E-03	7.7366E-03	6.4390E-03
O2	2.3653E-03	1.6202E-03	8.5780E-04
O2+	2.0664E-04	9.2754E-04	8.2701E-04
O2-	2.6780E-05	9.2317E-05	5.5543E-04
C	2.8194E-01	2.5145E-01	2.3620E-01
C+	2.3739E-02	4.2392E-02	4.7190E-02
C++	8.6329E-08	4.2957E-05	1.6664E-04
C-	8.8221E-04	1.6420E-03	1.2231E-03
CO	1.9881E-02	3.0488E-02	1.2994E-03
CO+	1.1899E-03	8.4299E-04	5.0799E-04
CO2	1.4657E-05	1.0215E-06	2.5492E-07
C2	1.7271E-03	2.6514E-04	9.7218E-04

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_1 = 1.25\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5285E+03	2.4986E+04	3.6380E+04
T	6.6133E+01	1.1694E+02	1.4062E+02
RHO	1.2082E+01	6.1031E+01	6.9944E+01
H	-7.8995E+00	-1.5142E+01	-1.8583E+01
A	-1.4181E+01	1.9950E+01	2.2899E+01
S	-2.8232E+00	3.0118E+00	3.1195E+00
Z	-3.1645E+00	3.5011E+00	3.6988E+00
GAME	9.6097E-01	9.7219E-01	1.0082E+00
U	4.2428E+01	8.4100E+00	8.8489E+00

SPECIES	MOLE FRACTIONS		
E-	6.2201E-02	1.4664E-01	1.9071E-01
O	5.9214E-01	4.5768E-01	3.9691E-01
O+	2.5555E-02	1.0268E-01	1.3666E-01
O++	1.2920E-08	5.3749E-05	3.8961E-04
O-	3.2704E-03	5.9651E-03	4.2078E-03
O2	1.3727E-03	7.8141E-04	3.2677E-04
O2+	2.7441E-04	7.5057E-04	5.5753E-04
O2-	2.1297E-05	4.5037E-05	2.0725E-05
C	2.6603E-01	2.3281E-01	2.1185E-01
C+	3.9719E-02	4.9475E-02	5.6267E-02
C++	1.0958E-06	1.5218E-04	5.8644E-04
C-	9.8851E-04	1.1530E-03	7.6065E-04
CO	6.7790E-03	1.2265E-03	4.5354E-04
CO+	9.3071E-04	4.9449E-04	2.6194E-04
CO2	2.5480E-06	2.1867E-07	4.4102E-08
C2	7.0754E-04	9.4303E-05	3.0641E-05

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_1 = 1.20\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3337E+03	2.3523E+04	3.4022E+04
T	6.1374E+01	1.0938E+02	1.3037E+02
RHO	1.2290E+01	6.2990E+01	7.2730E+01
H	-7.2036E+00	-1.3905E+01	-1.7005E+01
A	1.3587E+01	1.8932E+01	2.1553E+01
S	2.7672E+00	2.9546E+00	3.0590E+00
Z	3.0940E+00	3.4143E+00	3.5881E+00
GAME	9.7214E-01	9.5975E-01	9.9302E-01
U	4.0791E+01	7.9692E+00	8.2937E+00

SPECIES	MOLE FRACTIONS		
E-	4.5977E-02	1.2626E-01	1.6647E-01
O	6.1009E-01	4.8518E-01	4.2909E-01
O+	1.6886E-02	8.6998E-02	1.1921E-01
O++	2.1819E-09	2.1926E-05	1.6718E-04
O-	3.0361E-03	6.8854E-03	5.2741E-03
O2	1.7844E-03	1.1364E-03	5.4360E-04
O2+	2.4262E-04	8.4669E-04	6.8984E-04
O2-	2.4156E-05	6.5353E-05	3.4493E-05
C	2.7578E-01	2.4249E-01	2.2452E-01
C+	3.1810E-02	4.5900E-02	5.1523E-02
C++	3.4497E-07	8.2414E-05	3.1788E-04
C-	9.6394E-04	1.3875E-03	9.7138E-04
CO	1.1229E-02	1.9362E-03	7.6981E-04
CO+	1.0615E-03	6.4922E-04	3.6704E-04
CO2	5.8303E-06	4.7232E-07	1.0609E-07
C2	1.1054E-03	1.5788E-04	5.4473E-05

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_1 = 1.30\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7321E+03	2.6626E+04	3.9086E+04
T	7.0644E+01	1.2494E+02	1.5148E+02
RHO	1.1963E+01	5.9324E+01	6.7622E+01
H	-8.6242E+00	-1.6431E+01	-2.0251E+01
A	-1.4756E+01	2.1037E+01	2.4271E+01
S	-2.8764E+00	3.0667E+00	3.1780E+00
Z	-3.2329E+00	3.5924E+00	3.8156E+00
GAME	9.5341E-01	9.8605E-01	1.0192E+00
U	4.4083E+01	8.8995E+00	9.4480E+00

SPECIES	MOLE FRACTIONS		
E-	7.9228E-02	1.6744E-01	2.1500E-01
O	5.7151E-01	4.2953E-01	3.6493E-01
O+	3.5750E-02	1.1846E-01	1.5331E-01
O++	5.5812E-08	1.2290E-04	8.2535E-04
O-	3.3960E-03	5.0519E-03	3.3086E-03
O2	1.0807E-03	5.2888E-04	2.0743E-04
O2+	2.9942E-04	6.4842E-04	4.4049E-04
O2-	1.8582E-05	3.0155E-05	1.2314E-05
C	2.5534E-01	2.2257E-01	1.9860E-01
C+	4.6749E-02	5.3192E-02	6.1249E-02
C++	2.8153E-06	2.7101E-04	1.0305E-03
C-	9.7151E-04	9.4658E-04	5.9351E-04
CO	4.3789E-03	7.7729E-04	2.6982E-04
CO+	8.1028E-04	3.7375E-04	1.8635E-04
CO2	1.2352E-06	1.0194E-07	1.8803E-08
C2	4.6393E-04	5.6771E-05	1.7574E-05

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_{S1} = 1.35\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9443E+03	2.8352E+04	4.1994E+04
T	7.5053E+01	1.3333E+02	1.6237E+02
RHO	1.1876E+01	5.7652E+01	6.5755E+01
H	-9.3777E+00	-1.7769E+01	-2.1998E+01
A	1.5339E+01	2.2173E+01	2.5579E+01
S	2.9286E+00	3.1198E+00	3.2330E+00
Z	3.3032E+00	3.6884E+00	3.9331E+00
GAME	9.4900E-01	9.9971E-01	1.0245E+00
U	4.5748E+01	9.4340E+00	1.0063E+01

SPECIES	MOLE FRACTIONS		
E-	9.7055E-02	1.8848E-01	2.3816E-01
O	5.4861E-01	4.0115E-01	3.3490E-01
O+	4.7424E-02	1.3403E-01	1.6812E-01
O++	1.9633E-07	2.6276E-04	1.6015E-03
O-	3.4273E-03	4.1944E-03	2.6102E-03
O2	8.5682E-04	3.5300E-04	1.3061E-04
O2+	3.1697E-04	5.4684E-04	3.4559E-04
O2-	1.5957E-05	1.9715E-05	7.4752E-06
C	2.4445E-01	2.1178E-01	1.8559E-01
C+	5.2972E-02	5.7149E-02	6.6077E-02
C++	6.3133E-06	4.6594E-04	1.6822E-03
C-	9.2621E-04	7.6963E-04	4.6876E-04
CO	2.9353E-03	4.9314E-04	1.6635E-04
CO+	6.9864E-04	2.8070E-04	1.3445E-04
CO2	6.3402E-07	4.7850E-08	8.5738E-09
C2	3.0766E-04	3.4489E-05	1.0548E-05

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_{S1} = 1.45\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.3932E+03	3.1999E+04	4.8269E+04
T	8.3654E+01	1.5096E+02	1.8427E+02
RHO	1.1755E+01	5.4474E+01	6.2700E+01
H	-1.0970E+01	-2.0592E+01	-2.5708E+01
A	1.6539E+01	2.4468E+01	2.8074E+01
S	3.0299E+00	3.2207E+00	3.3597E+00
Z	3.4508E+00	3.8913E+00	4.1777E+00
GAME	9.4761E-01	1.0192E+00	1.0238E+00
U	4.9090E+01	1.0595E+01	1.1299E+01

SPECIES	MOLE FRACTIONS		
E-	1.3372E-01	2.3007E-01	2.8242E-01
O	4.9873E-01	3.4587E-01	2.7916E-01
O+	7.3887E-02	1.6291E-01	1.9272E-01
O++	1.5449E-06	9.7529E-04	4.5359E-03
O-	3.2634E-03	2.7924E-03	1.6457E-03
O2	5.4066E-04	1.5535E-04	5.4388E-05
O2+	3.2827E-04	3.6903E-04	2.0830E-04
O2-	1.1237E-05	6.1654E-06	2.9037E-06
C	2.2362E-01	1.8921E-01	1.6027E-01
C+	6.3016E-02	6.5551E-02	7.4781E-02
C++	2.3705E-05	1.2211E-03	3.7578E-03
C-	7.9201E-04	5.0405E-04	3.0184E-04
CO	1.4185E-03	2.0359E-04	6.8346E-05
CO+	5.0769E-04	1.5779E-04	7.1804E-05
CO2	1.8790E-07	1.1172E-08	2.0652E-09
C2	1.4009E-04	1.3361E-05	4.2006E-06

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_{S1} = 1.40\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1647E+03	3.0150E+04	4.5087E+04
T	7.9374E+01	1.4205E+02	1.7340E+02
RHO	1.1811E+01	5.6030E+01	6.4134E+01
H	-1.0160E+01	-1.9157E+01	-2.3827E+01
A	1.5931E+01	2.3327E+01	2.6849E+01
S	2.9798E+00	3.1711E+00	3.2870E+00
Z	3.3757E+00	3.7883E+00	4.0544E+00
GAME	9.4722E-01	1.0113E+00	1.0254E+00
U	4.7418E+01	1.0004E+01	1.0705E+01

SPECIES	MOLE FRACTIONS		
E-	1.1527E-01	2.0945E-01	2.6074E-01
O	5.2421E-01	3.7310E-01	3.0616E-01
O+	6.0221E-02	1.4896E-01	1.8134E-01
O++	5.8615E-07	5.2449E-04	2.8137E-03
O-	3.3785E-03	3.4348E-03	2.0639E-03
O2	6.8136E-04	2.3403E-04	8.3383E-05
O2+	3.2655E-04	4.5236E-04	2.6868E-04
O2-	1.3500E-05	1.2709E-05	4.6038E-06
C	2.3384E-01	2.0059E-01	1.7269E-01
C+	5.8357E-02	6.1306E-02	7.0669E-02
C++	1.2727E-05	7.7070E-04	2.5904E-03
C-	8.6583E-04	6.2276E-04	3.7360E-04
CO	2.0226E-03	3.1489E-04	1.0505E-04
CO+	5.9779E-04	2.1030E-04	9.7674E-05
CO2	3.4017E-07	2.2823E-08	4.0954E-09
C2	2.0660E-04	2.1255E-05	6.5352E-06

 $p_1 = 1.00\text{E}+05 \text{ N/SQ-M, } U_{S1} = 1.50\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6295E+03	3.3866E+04	5.1527E+04
T	8.7936E+01	1.5991E+02	1.9455E+02
RHO	1.1696E+01	5.2993E+01	6.1643E+01
H	-1.1809E+01	-2.2072E+01	-2.7653E+01
A	1.7169E+01	2.5570E+01	2.9226E+01
S	3.0792E+00	3.2689E+00	3.3890E+00
Z	3.5289E+00	3.9944E+00	4.2966E+00
GAME	9.4987E-01	1.0231E+00	1.0219E+00
U	5.0799E+01	1.1212E+01	1.1888E+01

SPECIES	MOLE FRACTIONS		
E-	1.5229E-01	2.5010E-01	3.0219E-01
O	4.7251E-01	3.1985E-01	2.5510E-01
O+	8.8185E-02	1.7558E-01	2.0186E-01
O++	3.6946E-06	1.6875E-03	6.6841E-03
O-	3.0946E-03	2.2679E-03	1.3386E-03
O2	4.2649E-04	1.0405E-04	3.6925E-05
O2+	3.2264E-04	2.9846E-04	1.6338E-04
O2-	9.1888E-06	5.2817E-06	1.9172E-06
C	2.1378E-01	1.7787E-01	1.4905E-01
C+	6.7088E-02	6.9723E-02	7.8121E-02
C++	4.1607E-05	1.8467E-03	5.1062E-03
C-	7.1604E-04	4.0998E-04	2.4962E-04
CO	1.0055E-03	1.3402E-04	4.6573E-05
CO+	4.2797E-04	1.1903E-04	5.4127E-05
CO2	1.0567E-07	5.6619E-09	1.1278E-09
C2	9.5584E-05	8.6073E-06	2.8452E-06

TABLE I.- Continued

$$p_1 = 100 \text{ kN/m}^2$$

 $P_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad US_1 = 1.55\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8734E+03	3.5757E+04	5.4813E+04
T	9.2259E+01	1.6880E+02	2.0481E+02
RMO	1.1630E+01	5.1630E+01	6.0542E+01
M	-1.2676E+01	-2.3601E+01	-2.9654E+01
A	1.7823E+01	2.6627E+01	3.0396E+01
S	3.1277E+00	3.3159E+00	3.4390E+00
Z	3.6100E+00	4.1028E+00	4.4206E+00
GAME	9.5379E-01	1.0237E+00	1.0205E+00
U	5.2424E+01	1.1815E+01	1.2456E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7090E-01	2.6940E-01	3.2168E-01
O	4.4584E-01	2.9527E-01	2.3192E-01
O+	1.0290E-01	1.8682E-01	2.0966E-01
O++	8.1887E-06	2.7268E-03	9.3783E-03
O-	2.8845E-03	1.8484E-03	1.0908E-03
O2	3.3352E-04	7.0652E-05	2.5214E-05
O2+	3.1049E-04	2.4034E-04	1.2721E-04
O2-	7.3734E-06	3.4646E-06	1.2741E-06
C	2.0426E-01	1.6678E-01	1.3815E-01
C+	7.0710E-02	7.3654E-02	8.0973E-02
C++	6.9803E-05	2.6665E-03	6.7104E-03
C-	6.3951E-04	3.3618E-04	2.0759E-04
CO	7.1655E-04	9.0103E-05	3.2094E-05
CO+	3.5807E-04	9.0496E-05	4.0877E-05
CO2	6.0004E-08	2.9842E-09	6.2893E-10
C2	6.5522E-05	5.6945E-06	1.9588E-06

 $P_1 = 1.00\text{E}+05 \text{ N/SQ-M}, \quad US_1 = 1.60\text{E}+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1247E+03	3.7635E+04	5.8119E+04
T	9.6632E+01	1.7760E+02	2.1461E+02
RMO	1.1556E+01	5.0322E+01	5.9623E+01
M	-1.3571E+01	-2.5171E+01	-3.1710E+01
A	1.8503E+01	2.7651E+01	3.1534E+01
S	3.1750E+00	3.3624E+00	3.4868E+00
Z	3.6937E+00	4.2111E+00	4.5420E+00
GAME	9.5918E-01	1.0223E+00	1.0201E+00
U	5.4081E+01	1.2444E+01	1.3006E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.8933E-01	2.8808E-01	3.3977E-01
O	4.1917E-01	2.7199E-01	2.1095E-01
O+	1.1771E-01	1.9667E-01	2.1576E-01
O++	1.6998E-05	4.1498E-03	1.2437E-02
O-	2.6470E-03	1.5128E-03	9.0047E-04
O2	2.5852E-04	4.8575E-05	1.7661E-05
O2+	2.9311E-04	1.9280E-04	9.9797E-05
O2-	5.8123E-06	2.3025E-06	8.7165E-07
C	1.9505E-01	1.5600E-01	1.2821E-01
C+	7.3982E-02	7.7256E-02	8.3160E-02
C++	1.1278E-04	3.6947E-03	8.4637E-03
C-	5.6548E-04	2.7783E-04	1.7529E-04
CO	5.1272E-04	6.1695E-05	2.2778E-05
CO+	2.9770E-04	6.9248E-05	3.1381E-05
CO2	3.4334E-08	1.6267E-09	3.6863E-10
C2	4.5142E-05	3.8554E-06	1.3948E-06

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+05 N/SQ-M, US1= 1.00E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7532E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+00
RHO	6.1029E+00	1.9532E+01	2.7599E+01
M	9.4419E-01	9.0798E-01	8.8129E-01
A	1.4478E+00	1.7757E+00	1.9265E+00
S	1.0905E+00	1.1064E+00	1.1296E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7857E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.6040E-54	2.2646E-44	7.9E-80E-36
O	1.6285E-16	1.0412E-12	6.0430E-11
O+	1.0048E-38	6.6910E-35	4.6976E-32
O++	0.	0.	0.
O-	4.6769E-59	1.4219E-48	2.8978E-39
O2	4.3992E-04	4.3992E-04	4.3997E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9637E-42	3.6799E-34
C	3.7314E-55	3.2772E-46	3.3004E-38
C+	2.0585E-66	4.6753E-57	1.2419E-49
C++	0.	0.	0.
C-	0.	4.8585E-83	3.2468E-67
CO	1.1426E-12	1.0999E-09	1.0315E-07
CO+	1.6634E-27	3.6518E-33	8.0038E-30
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	2.2886E-79	1.9889E-66	1.6716E-54

P1 = 2.00E+05 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9411E+02	2.9199E+02
T	3.8893E+00	5.6960E+00	6.6080E+00
RHO	8.0418E+00	3.4077E+01	4.4154E+01
M	8.8932E-01	8.0790E-01	7.6472E-01
A	1.8839E+00	2.2686E+00	2.4378E+00
S	1.1683E+00	1.2008E+00	1.2776E+00
Z	1.0000E+00	1.0001E+00	1.0007E+00
GAME	9.1255E-01	9.0348E-01	8.9870E-01
U	4.5382E+00	1.0735E+00	1.0091E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.0446E-37	7.0272E-22	4.2790E-18
O	3.5804E-11	5.6449E-08	8.4223E-07
O+	1.5138E-32	2.0098E-27	1.1943E-24
O++	0.	0.	9.1541E-44
O-	1.1306E-40	5.2007E-24	7.8965E-20
O2	4.3994E-04	5.2407E-04	1.1444E-03
O2+	1.7597E-18	1.7570E-18	2.1519E-17
O2-	1.1706E-35	1.8322E-21	1.5404E-17
C	3.4140E-39	7.1353E-26	2.3152E-21
C+	1.5337E-50	3.1895E-39	5.9242E-33
C++	0.	1.7129E-87	6.2214E-77
C-	3.7953E-69	6.0047E-41	1.2606E-34
CO	5.3997E-08	1.6844E-04	1.4104E-03
CO+	2.0419E-30	1.6263E-24	7.1006E-22
CO2	9.9956E-01	9.9931E-01	9.9744E-01
C2	5.4675E-56	2.0922E-35	6.5476E-30

P1 = 2.00E+05 N/SQ-M, US1= 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2169E+02	1.9028E+02
T	3.1957E+00	4.5033E+00	5.2627E+00
RHO	7.1505E+00	2.7026E+01	3.6153E+01
M	9.1903E-01	8.6219E-01	8.2786E-01
A	1.7137E+00	2.0230E+00	2.1829E+00
S	1.1292E+00	1.1538E+00	1.1792E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1904E-01	9.0878E-01	9.0539E-01
U	3.8201E+00	1.0101E+00	9.3964E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.1640E-44	2.0904E-28	1.0385E-24
O	1.5075E-13	4.2052E-10	1.2891E-08
O+	3.4548E-35	1.7006E-30	2.4739E-28
O++	0.	0.	0.
O-	2.4859E-48	2.8760E-31	3.1532E-27
O2	4.3992E-04	4.4029E-04	4.5877E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0045E-42	1.5699E-27	5.5684E-24
C	8.2413E-46	2.5762E-31	6.5732E-28
C+	1.0790E-56	2.9819E-43	4.3377E-40
C++	0.	0.	2.8284E-93
C-	3.9206E-82	2.3109E-52	7.5424E-47
CO	2.6317E-10	7.4470E-07	3.7727E-05
CO+	2.2867E-33	1.4601E-27	1.6509E-25
CO2	9.9956E-01	9.9956E-01	9.9950E-01
C2	8.9438E-66	3.4783E-44	2.7311E-39

P1 = 2.00E+06 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8573E+02	4.1709E+02
T	4.4521E+00	7.0050E+00	8.0101E+00
RHO	8.7990E+00	4.0731E+01	5.1807E+01
M	8.5508E-01	7.4500E-01	6.9252E-01
A	2.0574E+00	2.5371E+00	2.6755E+00
S	1.2068E+00	1.2462E+00	1.2740E+00
Z	1.0000E+00	1.0014E+00	1.0051E+00
GAME	9.0797E-01	8.9599E-01	8.9014E-01
U	5.2400E+00	1.1372E+00	1.0731E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.3917E-27	3.2617E-17	3.2516E-15
O	1.9413E-06	2.5342E-04	2.2646E-05
O+	2.5868E-30	1.1585E-23	2.1468E-20
O++	0.	6.4642E-85	1.1592E-79
O-	5.2472E-70	7.3477E-19	2.7025E-14
O2	4.4210E-04	1.8750E-03	6.4756E-03
O2+	1.7557E-18	1.5085E-16	2.1488E-14
O2-	1.0748E-26	1.1575E-14	1.7670E-14
C	5.1499E-70	2.3982E-20	2.3380E-17
C+	4.8079E-42	4.3078E-32	2.8444E-27
C++	1.4564E-97	5.2754E-73	3.1519E-65
C-	4.9577E-51	1.7652E-33	1.0079E-28
CO	4.3687E-06	2.8757E-03	1.0098E-03
CO+	1.1565E-27	4.9960E-21	9.7463E-18
CO2	9.9956E-01	9.9555E-01	9.8447E-01
C2	2.1710E-42	8.4600E-70	1.4659E-24

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2295E+01	2.9741E+02	5.4517E+02
T	5.5139E+00	8.3768E+00	9.7457E+00
RHO	9.4467E+00	4.7316E+01	5.9442E+01
M	8.1627E-01	6.7753E-01	6.1161E-01
A	2.2324E+00	2.7286E+00	2.8943E+00
S	1.2441E+00	1.2902E+00	1.3190E+00
Z	1.0701E+00	1.0075E+00	1.0173E+00
GAME	9.0751E-01	8.8643E-01	8.8109E-01
U	5.9564E+00	1.1909E+00	1.1241E+00

SPECIES	MOLE FRACTIONS		
E-	1.3998E-22	1.2628E-14	3.2045E-13
O	6.3179E-08	4.5704E-05	2.1579E-04
O+	1.6841E-27	1.5746E-10	2.7280E-17
O++	0.	1.4425E-75	1.8192E-67
O-	2.9520E-25	1.3578E-15	8.4749E-14
O2	5.2662E-04	7.8072E-07	1.7245E-02
O2+	1.7598E-18	8.4961E-14	7.0049E-12
O2-	1.7777E-22	7.1007E-14	2.6031E-12
C	5.0620E-20	1.4278E-16	1.5226E-14
C+	2.3297E-28	3.6798E-26	5.0197E-23
C++	4.4505E-95	3.2239E-62	2.5642E-55
C-	9.1737E-44	1.7901E-27	2.6207E-24
CO	1.7354E-04	1.4787E-02	3.7842E-02
CO+	1.1467E-24	3.7963E-17	3.781E-15
CO2	9.9970E-01	9.7736E-01	9.4870E-01
C2	6.2649E-37	1.5734E-23	1.1872E-20

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 2.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8301E+01	6.9210E+02	9.4227E+02
T	7.3596E+00	1.0772E+01	1.1742E+01
RHO	1.0568E+01	6.1476E+01	7.4953E+01
M	7.2400E-01	5.0405E-01	4.2237E-01
A	2.5438E+00	3.1429E+00	3.3728E+00
S	1.3152E+00	1.3767E+00	1.4077E+00
Z	1.0039E+00	1.0451E+00	1.0701E+00
GAME	8.8970E-01	8.7741E-01	8.7872E-01
U	7.3729E+00	1.2727E+00	1.2127E+00

SPECIES	MOLE FRACTIONS		
E-	6.3325E-16	1.3074E-11	8.0200E-11
O	1.4802E-05	1.3109E-03	3.0179E-02
O+	2.7407E-27	7.9202E-15	1.7637E-13
O++	2.8004E-82	9.2440E-60	2.9328E-52
O-	1.2314E-17	7.9914E-12	7.8413E-11
O2	4.7028E-03	4.7287E-07	6.2890E-02
O2+	1.5909E-15	1.5058E-10	1.1257E-05
O2-	9.4388E-16	1.3003E-10	9.7378E-10
C	6.1019E-19	2.5471E-12	3.2522E-11
C+	2.9837E-29	1.0723E-19	4.3647E-19
C++	3.0775E-68	4.5443E-68	5.7489E-63
C-	8.2205E-31	7.2380E-21	2.7626E-19
CO	7.7441E-03	8.5039E-02	1.7977E-01
CO+	1.2400E-19	5.1203E-13	6.7634E-12
CO2	9.8794E-01	8.7137E-01	8.0612E-01
C2	6.1231E-27	1.3089E-17	4.5544E-15

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 2.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4490E+01	5.3114E+02	7.3777E+02
T	6.4275E+00	9.5958E+00	1.0576E+01
RHO	1.0025E+01	5.4178E+01	6.7133E+01
M	7.7290E-01	5.9247E-01	5.7191E-01
A	2.4035E+00	2.9246E+00	3.1061E+00
S	1.2803E+00	1.3333E+00	1.3623E+00
Z	1.0009E+00	1.0217E+00	1.0391E+00
GAME	8.9797E-01	8.7960E-01	8.7787E-01
U	6.6612E+00	1.2346E+00	1.1682E+00

SPECIES	MOLE FRACTIONS		
E-	3.7576E-18	6.9704E-13	7.4632E-12
O	1.2070E-06	2.2899E-04	9.9540E-04
O+	3.3088E-25	7.0715E-17	3.7794E-15
O++	1.0074E-98	3.1515E-64	1.1845E-58
O-	2.5520E-20	2.0096E-13	4.1808E-12
O2	1.3077E-07	2.1734E-02	3.7074E-07
O2+	5.8224E-18	6.4095E-17	8.8952E-11
O2-	4.2813E-18	5.5198E-12	7.7576E-11
C	6.8317E-22	3.8054E-16	1.2050E-12
C+	7.8911E-24	8.9335E-23	2.8501E-20
C++	6.6723E-82	9.4709E-53	3.0900E-48
C-	3.8744E-36	3.7763E-24	1.7993E-21
CO	1.7755E-02	4.2136E-02	7.4207E-02
CO+	1.7781E-22	8.2383E-15	2.5446E-13
CO2	9.9695E-01	9.3620E-01	8.8763E-01
C2	3.1656E-21	2.7492E-20	4.3857E-18

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 2.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3511E+01	8.8400E+02	1.1850E+03
T	8.2539E+00	1.1891E+01	1.2885E+01
RHO	1.1205E+01	5.9030E+01	8.2913E+01
M	6.7730E-01	4.0558E-01	3.1726E-01
A	2.7121E+00	3.2547E+00	3.5510E+00
S	1.3494E+00	1.4152E+00	1.4524E+00
Z	1.0111E+00	1.0770E+00	1.1092E+00
GAME	8.8138E-01	8.7887E-01	8.8233E-01
U	8.0883E+00	1.3152E+00	1.2634E+00

SPECIES	MOLE FRACTIONS		
E-	3.3830E-14	1.1788E-10	5.3777E-10
O	1.0028E-04	3.6235E-03	7.0825E-03
O+	2.4056E-19	2.4774E-13	2.7159E-12
O++	6.6823E-74	1.0750E-52	8.4331E-48
O-	2.0115E-15	1.2109E-10	8.0873E-10
O2	1.1335E-02	6.8236E-02	9.1730E-07
O2+	1.0527E-13	1.7776E-09	8.7578E-05
O2-	6.9539E-14	1.3479E-09	7.1079E-29
C	2.2453E-16	5.6040E-11	4.8657E-10
C+	2.1513E-26	1.2378E-17	3.0590E-16
C++	1.1537E-60	3.6877E-43	1.7485E-29
C-	3.5764E-28	9.7622E-19	2.6674E-17
CO	2.1900E-02	1.7928E-01	1.8975E-01
CO+	3.6392E-17	1.0802E-11	9.3558E-11
CO2	9.4666E-01	7.8884E-01	7.1144E-01
C2	9.1376E-24	9.9153E-16	2.0103E-14

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+05 N/SQ-M, US1 = 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1015E+02	1.1108E+03	1.4721E+03
T	9.0800E+00	1.2990E+01	1.4046E+01
RHO	1.1850E+01	7.6611E+01	9.0705E+01
M	6.1508E-01	2.9794E-01	1.9251E-01
A	2.8529E+00	3.5774E+00	3.7962E+00
S	1.3833E+00	1.4623E+00	1.4975E+00
Z	1.0237E+00	1.1161E+00	1.1555E+00
GAME	8.7561E-01	8.8269E-01	8.8795E-01
U	8.8088E+00	1.3649E+00	1.3234E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.2467E-13	6.8468E-10	2.6687E-09
O	4.1075E-04	8.0035E-03	1.4133E-02
O+	2.4641E-17	3.7224E-12	3.2744E-11
O++	5.7171E-69	1.7411E-49	7.3488E-45
O-	7.8860E-14	1.0331E-09	5.5746E-09
O2	2.3181E-02	9.6430E-02	1.2080E-01
O2+	2.3116E-12	1.0115E-08	4.3747E-08
O2-	1.6102E-12	8.5218E-09	3.6374E-08
C	1.4161E-14	6.4617E-10	4.5509E-09
C+	2.9564E-23	4.8310E-16	1.0088E-14
C++	1.9513E-56	5.1708E-40	1.1466E-36
C-	1.1683E-24	4.2494E-17	9.7280E-16
CO	4.5913E-07	2.0007E-01	2.5498E-01
CO+	2.0640E-15	1.2047E-10	8.3695E-10
CO2	9.3050E-01	6.9549E-01	6.1008E-01
C2	4.2563E-21	2.8971E-14	4.7059E-13

P1 = 2.00E+05 N/SQ-M, US1 = 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4743E+02	1.4687E+02	2.1857E+03
T	1.0548E+01	1.5249E+01	1.4547E+01
RHO	1.3166E+01	9.0244E+01	1.0629E+02
M	4.8585E-01	5.5774E-02	-8.0093E-02
A	3.1301E+00	4.0685E+00	4.3524E+00
S	1.4512E+00	1.5680E+00	1.5882E+00
Z	1.0447E+00	1.2125E+00	1.2765E+00
GAME	8.7778E-01	8.9528E-01	9.0790E-01
U	1.0756E+01	1.4964E+00	1.4825E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.7022E-11	1.1605E-08	2.8877E-08
O	2.7243E-03	2.6349E-02	1.1691E-02
O+	1.0720E-14	2.9209E-10	1.9784E-05
O++	2.7081E-60	2.3999E-41	4.7114E-38
O-	1.0195E-11	2.0238E-08	1.2741E-07
O2	5.8461E-07	1.4924E-01	1.6010E-01
O2+	1.4875E-10	1.8171E-07	6.2166E-07
O2-	1.0692E-10	1.4574E-07	4.8705E-07
C	3.3107E-15	3.7871E-08	1.8100E-07
C+	1.0100E-19	2.0935E-13	2.9787E-12
C++	6.8592E-65	1.1849E-32	5.2171E-31
C-	5.5012E-21	2.1511E-14	3.7440E-13
CO	1.1887E-01	3.7411E-01	2.7921E-01
CO+	4.3476E-12	5.5022E-09	2.9723E-08
CO2	8.1099E-01	5.0020E-01	4.1000E-01
C2	7.5228E-18	7.1100E-12	8.0909E-11

P1 = 2.00E+05 N/SQ-M, US1 = 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2820E+02	1.2730E+03	1.8059E+03
T	9.8393E+00	1.4102E+01	1.5256E+01
RHO	1.2507E+01	8.2817E+01	9.7578E+01
M	5.5326E-01	1.8125E-01	6.1599E-02
A	2.0911E+00	3.8145E+00	4.0620E+00
S	1.4171E+00	1.5705E+00	1.5528E+00
Z	1.0417E+00	1.1416E+00	1.2082E+00
GAME	8.7284E-01	8.8829E-01	8.9520E-01
U	9.5272E+00	1.4748E+00	1.3048E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	5.4782E-12	3.0824E-09	1.0859E-08
O	1.1844E-02	1.5777E-02	2.5247E-02
O+	4.3580E-14	3.8225E-11	2.8074E-10
O++	2.4473E-62	3.5525E-45	2.9521E-41
O-	1.1402E-12	6.3728E-09	2.9261E-08
O2	3.9794E-02	1.2421E-01	1.4741E-01
O2+	2.3070E-11	4.7932E-08	1.7580E-07
O2-	1.5660E-11	3.9503E-08	1.4548E-07
C	2.7079E-13	5.7522E-09	3.1508E-08
C+	1.9721E-21	1.2144E-14	2.0027E-13
C++	2.8094E-53	1.1707E-36	1.0005E-32
C-	8.7277E-23	1.1673E-16	2.0713E-14
CO	7.8570E-02	2.6295E-01	2.1933E-01
CO+	2.8259E-14	4.7855E-10	5.1944E-09
CO2	8.8050E-01	5.0754E-01	5.0801E-01
C2	2.1676E-18	5.4454E-12	7.0682E-12

P1 = 2.00E+05 N/SQ-M, US1 = 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6843E+02	1.9942E+02	2.5079E+03
T	1.1223E+01	1.6454E+01	1.7040E+01
RHO	1.3741E+01	9.5592E+01	1.0934E+02
M	4.1585E-01	-7.8637E-02	-2.3402E-01
A	3.7722E+00	4.3415E+00	4.6688E+00
S	1.4855E+00	1.5520E+00	1.5337E+00
Z	1.0921E+00	1.2679E+00	1.3295E+00
GAME	8.7376E-01	9.0340E-01	9.1390E-01
U	1.0979E+01	1.5807E+00	1.5782E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.2835E-10	3.8455E-08	1.2639E-07
O	5.3485E-03	4.2174E-02	6.4590E-02
O+	9.9001E-14	1.7885E-09	1.1120E-08
O++	1.0770E-55	4.4495E-38	5.8776E-35
O-	6.1191E-11	1.2273E-07	6.7763E-07
O2	7.6407E-02	1.6546E-01	1.8257E-01
O2+	4.8750E-10	2.8201E-07	1.8632E-06
O2-	4.9144E-10	4.5215E-07	1.4067E-06
C	2.5431E-11	1.5957E-07	8.9597E-07
C+	2.2470E-18	2.6498E-12	1.5687E-11
C++	1.6900E-45	4.3549E-31	1.7373E-29
C-	1.4084E-19	2.8447E-13	4.0288E-12
CO	1.6374E-01	3.9040E-01	4.2107E-01
CO+	3.1879E-12	2.7134E-08	1.2444E-07
CO2	7.5189E-01	4.0797E-01	3.2077E-01
C2	1.2926E-16	7.0416E-11	7.5340E-10

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_{S1} = 3.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9057E+02	2.2643E+02	3.0708E+02
T	1.1870E+01	1.7778E+01	1.9466E+01
RHO	1.4778E+01	9.9677E+01	1.1297E+02
M	3.4030E+01	-2.7110E-01	-3.9842E-01
A	3.4107E+00	4.6357E+00	5.0144E+00
S	1.5202E+00	1.6248E+00	1.5788E+00
Z	1.1226E+00	1.2271E+00	1.2064E+00
GAME	8.7592E-01	9.1279E-01	9.2506E-01
U	1.1600E+01	1.6785E+00	1.5897E+00

SPECIES	MOLE FRACTIONS		
E-	4.7837E-10	1.1612E-07	3.8365E-07
H	6.4092E-02	6.7679E-02	9.4977E-02
O+	6.5709E-12	6.2552E-09	5.6044E-08
O+	3.2040E-02	2.0044E-05	4.6610E-32
O-	2.7677E-10	4.1540E-07	1.5901E-06
O2	1.0095E-01	1.8312E-01	1.8921E-01
O2+	2.4044E-01	1.6202E-06	4.6598E-06
O2-	1.7509E-00	1.2212E-06	3.6963E-06
C	1.4048E-10	7.5805E-07	3.0962E-06
C+	3.0171E-12	7.7110E-11	3.6387E-10
C+	2.8274E-02	6.4228E-09	4.1026E-26
C-	1.9471E-18	3.0086E-12	4.2021E-11
C0	2.1553E-01	4.2974E-01	4.7277E-01
C0+	1.7003E-11	1.1324E-07	5.6392E-07
C02	4.7911E-01	2.2254E-01	2.4302E-01
C2	1.7770E-12	5.6844E-10	6.0256E-09

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_{S1} = 3.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3881E+02	3.1095E+02	4.1060E+02
T	1.2180E+01	2.0608E+01	2.3031E+01
RHO	1.5178E+01	1.0379E+02	1.1582E+02
M	1.7550E-01	-5.3124E-01	-7.6277E-01
A	3.7326E+00	5.2897E+00	6.8027E+00
S	1.5905E+00	1.7188E+00	1.7677E+00
Z	1.1970E+00	1.4538E+00	1.5394E+00
GAME	8.8319E-01	9.3296E-01	9.4574E-01
U	1.3132E+01	1.9182E+00	1.9741E+00

SPECIES	MOLE FRACTIONS		
E-	3.8969E-09	8.6507E-07	3.0293E-06
H	2.2431E-02	1.2585E-01	1.7854E-01
O+	1.4770E-11	1.5745E-07	9.9309E-07
O+	2.8515E-07	2.2992E-10	5.4237E-27
O-	3.2579E-09	3.5373E-06	1.7053E-05
O2	1.4160E-01	1.8658E-01	1.7207E-01
O2+	2.1084E-08	9.1774E-06	2.7386E-05
O2-	1.4134E-08	6.3232E-06	1.7054E-05
C	2.7116E-09	1.1197E-05	6.1687E-05
C+	2.7029E-05	1.7642E-05	2.211E-08
C+	1.4001E-08	1.4437E-24	7.1251E-22
C-	1.9347E-16	2.0098E-10	2.9877E-09
C0	2.0567E-01	4.5842E-01	5.2207E-01
C0+	2.8614E-10	1.3891E-06	6.7348E-06
C02	5.2941E-01	1.8912E-01	1.2719E-01
C2	7.5944E-14	2.3805E-08	2.7035E-07

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_{S1} = 3.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1404E+02	2.7198E+02	3.5723E+02
T	1.2578E+01	1.9117E+01	2.1158E+01
RHO	1.4744E+01	1.0240E+02	1.1510E+02
M	2.6018E-01	-3.7208E-01	-5.7525E-01
A	3.5723E+00	4.6512E+00	5.3937E+00
S	1.5557E+00	1.6772E+00	1.7236E+00
Z	1.1584E+00	1.3892E+00	1.4668E+00
GAME	8.7614E-01	9.2301E-01	9.3718E-01
U	1.2417E+01	1.7908E+00	1.8244E+00

SPECIES	MOLE FRACTIONS		
E-	1.4347E-09	2.2631E-07	1.1057E-06
H	1.5295E-02	9.1528E-02	1.2322E-01
O+	3.5711E-12	4.1745E-08	2.5097E-07
O+	7.3647E-02	1.0172E-32	2.1331E-29
O-	1.0277E-09	1.2753E-06	4.7870E-06
O2	1.2198E-01	1.8899E-01	1.8521E-01
O2+	7.7072E-05	4.0736E-06	1.1862E-05
O2-	5.3220E-06	2.0317E-06	8.2555E-06
C	6.4301E-10	3.0457E-06	1.6354E-05
C+	3.1021E-14	2.361E-10	3.2474E-09
C+	5.7089E-02	1.2575E-26	6.6609E-24
C-	2.1234E-17	2.4430E-11	3.8020E-10
C0	2.5849E-01	4.6899E-01	5.0315E-01
C0+	7.4889E-11	4.1770E-07	2.0319E-06
C02	4.0422E-01	2.5058E-01	1.7827E-01
C2	1.0994E-14	3.9126E-09	4.2786E-08

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_{S1} = 4.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6488E+02	3.5101E+02	4.6679E+02
T	1.3842E+01	2.2223E+01	2.5110E+01
RHO	1.5451E+01	1.0392E+02	1.1526E+02
M	8.6262E-02	-6.9840E-01	-9.6456E-01
A	3.9013E+00	5.6505E+00	6.2415E+00
S	1.6260E+00	1.7596E+00	1.8109E+00
Z	1.2384E+00	1.5158E+00	1.6128E+00
GAME	8.8784E-01	9.4533E-01	9.6191E-01
U	1.7842E+01	2.0611E+00	2.1422E+00

SPECIES	MOLE FRACTIONS		
E-	9.7271E-09	2.1782E-06	7.9842E-06
H	3.4277E-02	1.6595E-01	2.2845E-01
O+	6.7958E-11	5.9977E-07	3.4939E-06
O+	6.5821E-05	6.2834E-28	1.1158E-24
O-	9.7651E-09	8.9406E-06	3.2627E-05
O2	1.5856E-01	1.7633E-01	1.5168E-01
O2+	5.2210E-08	1.8720E-05	4.8604E-05
O2-	3.3722E-08	1.2413E-05	3.1994E-05
C	9.0815E-09	3.7964E-05	2.1784E-04
C+	1.0544E-14	1.1711E-08	1.7464E-07
C+	1.3364E-24	1.1697E-22	6.2890E-20
C-	1.4029E-16	1.3438E-09	2.1138E-08
C0	3.5068E-01	5.1802E-01	5.3099E-01
C0+	9.4421E-10	4.2019E-06	2.0354E-05
C02	4.5649E-01	1.3961E-01	8.8524E-02
C2	4.3517E-13	1.7942E-07	1.5749E-06

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 4.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9222E+02	3.9161E+03	5.2525E+03
T	1.4527E+01	2.3974E+01	2.7420E+01
RHO	1.5685E+01	1.0296E+02	1.1368E+02
H	-7.5211E-03	-8.7343E-01	-1.1777E+00
A	4.0793E+00	6.0320E+00	6.7000E+00
S	1.6617E+00	1.7997E+00	1.8530E+00
Z	1.2825E+00	1.865E+00	1.6851E+00
GAME	8.9317E-01	9.5664E-01	9.7152E-01
U	1.4550E+01	2.2198E+00	2.3276E+00

SPECIES	MOLE FRACTIONS		
E-	2.2742E-08	5.2472E-06	2.0366E-05
O	4.8318E-02	2.1026E-01	2.7952E-01
O+	2.4667E-10	1.9256E-06	1.0854E-05
O++	4.7144E-44	7.8661E-26	1.4486E-22
O-	2.5891E-08	2.0773E-09	7.5357E-05
O2	1.7232E-01	1.5960E-01	1.2707E-01
O2+	1.1930E-07	3.4641E-05	8.2964E-05
O2-	7.3867E-08	2.2249E-05	5.4998E-05
C	2.9117E-08	1.2009E-04	7.2175E-04
C+	1.1334E-13	6.8950E-08	1.0680E-06
C++	4.1045E-25	6.8732E-21	3.9853E-18
C-	8.4892E-15	7.9692E-09	1.3486E-07
CO	3.9227E-01	5.2880E-01	5.3197E-01
CO+	2.0574E-09	1.1642E-05	5.5971E-05
CO2	2.8709E-01	1.0112E-01	6.0411E-02
C2	2.1502E-12	6.4149E-07	8.4286E-06

P1 = 2.00E+02 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.2084E+02	4.2218E+03	5.8523E+03
T	1.5738E+01	2.5875E+01	2.9951E+01
RHO	1.5840E+01	1.0108E+02	1.1145E+02
H	-1.0585E-01	-1.0561E+00	-1.4027E+00
A	4.2674E+00	6.4299E+00	7.1533E+00
S	1.6974E+00	1.8380E+00	1.8938E+00
Z	1.3293E+00	1.6525E+00	1.7532E+00
GAME	8.9907E-01	9.6693E-01	9.7446E-01
U	1.5255E+01	2.3937E+00	2.5252E+00

SPECIES	MOLE FRACTIONS		
E-	5.0953E-08	1.2192E-05	5.0067E-05
O	6.6070E-02	2.5644E-01	3.2742E-01
O+	8.4510E-10	5.5571E-06	2.9392E-05
O++	1.1478E-40	6.8056E-24	1.1547E-20
O-	6.4269E-08	4.4805E-05	1.6116E-04
O2	1.8200E-01	1.3852E-01	1.0204E-01
O2+	2.5642E-07	5.8209E-05	1.2594E-04
O2-	1.4057E-07	3.6780E-05	8.7318E-05
C	8.8549E-08	3.5778E-04	2.2159E-03
C+	6.5139E-13	3.6351E-07	5.6260E-06
C++	4.2194E-33	3.0616E-19	1.7368E-16
C-	4.8830E-14	4.2807E-08	7.7199E-07
CO	4.2977E-01	5.3242E-01	5.2686E-01
CO+	8.5250E-09	2.9699E-05	1.3836E-04
CO2	3.2259E-01	7.2075E-02	4.0832E-02
C2	1.0029E-11	2.9318E-06	4.0804E-05

P1 = 2.00E+02 N/SQ-M, US1 = 4.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.5355E+02	4.7232E+03	6.4573E+03
T	1.5087E+01	2.7937E+01	3.2708E+01
RHO	1.5515E+01	9.8571E+01	1.0914E+02
H	-7.0871E-03	-1.2446E+00	-1.6380E+00
A	4.4455E+00	6.8739E+00	7.5627E+00
S	1.7379E+00	1.8755E+00	1.9330E+00
Z	1.3787E+00	1.7107E+00	1.8144E+00
GAME	9.0555E-01	9.7410E-01	9.6562E-01
U	1.5557E+01	2.5811E+00	2.7223E+00

SPECIES	MOLE FRACTIONS		
E-	1.0554E-07	2.7605E-07	1.1495E-04
O	8.7813E-02	2.0167E-01	2.6802E-01
O+	2.5941E-10	1.4415E-06	6.7874E-05
O++	1.0542E-40	4.1118E-22	5.1721E-10
O-	1.4955E-08	0.7951E-05	2.1461E-04
O2	1.8458E-01	1.1541E-01	8.0624E-02
O2+	5.2077E-07	8.8990E-05	1.7130E-04
O2-	2.8744E-07	5.6641E-05	1.2848E-06
C	2.5207E-07	1.0745E-03	6.0317E-03
C+	2.2778E-12	1.7177E-06	2.4065E-05
C++	1.9454E-21	1.0206E-17	4.7087E-15
C-	2.5077E-12	2.0001E-07	3.7100E-06
CO	4.4114E-01	5.3052E-01	5.1630E-01
CO+	2.7197E-09	6.9466E-05	2.9887E-04
CO2	2.6404E-01	5.0777E-02	2.7916E-02
C2	6.2920E-11	1.2460E-05	1.6747E-04

P1 = 2.00E+02 N/SQ-M, US1 = 4.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9178E+02	5.1149E+03	7.0570E+03
T	1.4574E+01	3.0322E+01	3.5188E+01
RHO	1.5997E+01	9.8477E+01	1.0729E+02
H	-7.1611E-03	-1.4442E+00	-1.8809E+00
A	4.4777E+00	7.2215E+00	7.9054E+00
S	1.7685E+00	1.9115E+00	1.9705E+00
Z	1.4295E+00	1.7749E+00	1.8687E+00
GAME	9.1250E-01	9.7512E-01	9.5140E-01
U	1.6646E+01	2.7753E+00	2.9008E+00

SPECIES	MOLE FRACTIONS		
E-	2.2781E-07	5.5724E-07	2.3409E-04
O	1.1300E-01	2.6769E-01	3.0972E-01
O+	9.1275E-10	3.2282E-06	1.3178E-04
O++	8.5275E-40	1.6674E-20	1.1454E-17
O-	2.2013E-07	1.7123E-04	5.4742E-04
O2	1.8487E-01	0.3717E-01	6.4606E-02
O2+	1.0059E-06	1.2355E-04	2.1274E-04
O2-	5.1674E-07	8.1843E-05	1.7562E-04
C	4.5767E-07	2.6409E-03	1.3491E-02
C+	1.6480E-11	7.1121E-06	7.7955E-05
C++	7.2057E-20	2.5704E-14	6.0158E-14
C-	1.1038E-12	9.3605E-07	1.2665E-05
CO	4.8600E-01	5.2461E-01	4.5588E-01
CO+	5.5477E-09	1.4981E-04	5.4832E-04
CO2	2.1274E-01	3.5657E-02	1.9836E-02
C2	1.7227E-10	4.8177E-05	5.3041E-04

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+02 N/SQ-M, US1 = 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1407E+02	5.5029E+03	7.6357E+03
T	1.7602E+01	3.2434E+01	3.7532E+01
PHO	1.5848E+01	9.2775E+01	1.0600E+02
M	-4.2803E-01	-1.6455E+00	-2.1255E+00
A	4.9002E+00	7.7740E+00	8.2188E+00
S	1.8038E+00	1.9448E+00	2.0065E+00
Z	1.4875E+00	1.8288E+00	1.9193E+00
GAME	9.2017E-01	9.4715E-01	9.3771E-01
U	1.7735E+01	2.5692E+00	3.0517E+00

SPECIES	MOLE FRACTIONS		
E-	4.5554E-07	1.2401E-04	4.1399E-04
O	1.4477E-01	2.7757E-01	4.2434E-01
O+	2.2372E-08	4.8560E-08	2.7045E-04
O++	4.5242E-33	4.5913E-19	1.2982E-16
N-	6.8772E-07	2.0409E-04	8.4779E-04
N2	1.8150E-01	7.4848E-02	5.4166E-02
N2+	1.8534E-06	1.5971E-04	2.1466E-04
N2-	8.7498E-07	1.1202E-04	2.2533E-04
C	1.9479E-06	4.3599E-03	2.5508E-02
C+	7.4079E-11	2.5422E-05	1.9075E-04
C++	2.1744E-28	4.5797E-15	5.5524E-13
C-	5.3025E-12	3.4847E-04	3.7485E-05
CO	5.0463E-01	5.1435E-01	4.7687E-01
CO+	1.4785E-07	2.9142E-04	8.6194E-04
CO2	1.5754E-01	2.5707E-02	1.4810E-02
C2	4.5777E-10	1.4509E-04	1.2588E-03

P1 = 2.00E+02 N/SQ-M, US1 = 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8210E+02	6.2589E+03	8.7315E+03
T	1.9432E+01	3.6760E+01	4.1536E+01
PHO	1.5574E+01	8.8510E+01	1.0393E+02
M	-6.6540E-01	-2.0841E+00	-2.6461E+00
A	5.3846E+00	8.1539E+00	8.8185E+00
S	1.8722E+00	2.0142E+00	2.0743E+00
Z	1.5932E+00	1.9237E+00	2.0218E+00
GAME	9.3709E-01	9.4019E-01	9.2559E-01
U	1.8698E+01	3.2946E+00	3.2984E+00

SPECIES	MOLE FRACTIONS		
E-	1.7450E-06	3.9924E-04	9.4421E-04
O	2.1405E-01	4.2870E-01	4.6204E-01
O+	1.6554E-07	1.9867E-04	4.7102E-04
O++	1.8209E-31	6.5541E-17	4.4610E-15
N-	2.4072E-06	7.3849E-04	1.5892E-03
N2	1.5553E-01	5.1007E-02	4.2633E-02
N2+	5.4970E-01	2.1874E-04	3.3085E-04
N2-	2.1402E-06	1.8022E-04	3.2644E-04
C	1.2039E-05	2.3974E-02	5.7713E-02
C+	1.4723E-09	1.6545E-04	6.4282E-04
C++	2.1030E-25	3.4974E-13	1.0585E-11
C-	5.1309E-11	3.0291E-05	1.4725E-04
CO	5.2855E-01	4.7867E-01	4.1774E-01
CO+	8.2399E-07	7.6128E-04	1.5624E-03
CO2	9.8842E-07	1.3905E-02	9.1292E-03
C2	8.7757E-05	1.0540E-03	3.7330E-03

P1 = 2.00E+02 N/SQ-M, US1 = 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.4755E+02	5.8834E+03	8.1934E+03
T	1.8487E+01	3.4676E+01	3.9624E+01
PHO	1.5748E+01	9.0175E+01	1.0499E+02
M	-5.4446E-01	-1.8628E+00	-2.3836E+00
A	5.1363E+00	7.8776E+00	8.5163E+00
S	1.8387E+00	1.9809E+00	2.0414E+00
Z	1.5372E+00	1.8774E+00	1.9695E+00
GAME	9.2832E-01	9.5325E-01	9.2938E-01
U	1.8010E+01	3.1449E+00	3.1762E+00

SPECIES	MOLE FRACTIONS		
E-	9.0607E-07	2.3470E-04	6.5008E-04
O	1.7855E-01	4.0610E-01	4.4471E-01
O+	6.4404E-08	1.2367E-04	3.3218E-04
O++	3.5925E-33	7.0218E-18	8.8870E-16
N-	1.2700E-06	4.9499E-04	1.1966E-03
N2	1.7119E-01	6.0747E-02	4.7371E-02
N2+	2.2643E-06	1.8969E-04	2.8990E-04
N2-	1.4075E-06	1.4532E-04	2.7562E-04
C	4.7742E-06	1.7340E-02	4.0478E-02
C+	3.4729E-10	7.3170E-05	3.7547E-04
C++	7.8373E-27	5.0419E-14	2.8044E-12
C-	2.2408E-11	1.1822E-05	8.0621E-05
CO	5.2037E-01	4.9920E-01	4.4918E-01
CO+	3.4477E-07	5.0035E-04	1.2054E-03
CO2	1.2987E-01	1.8371E-02	1.1510E-02
C2	2.4428E-05	4.6763E-04	2.3529E-03

P1 = 2.00E+02 N/SQ-M, US1 = 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.1798E+02	6.6246E+03	9.2412E+03
T	2.0455E+01	3.8699E+01	4.3336E+01
PHO	1.5350E+01	8.6936E+01	1.0277E+02
M	-7.9083E-01	-2.3132E+00	-2.9154E+00
A	5.6517E+00	8.4250E+00	9.1203E+00
S	1.9072E+00	2.0474E+00	2.1104E+00
Z	1.6409E+00	1.9706E+00	2.0751E+00
GAME	9.4658E-01	9.3150E-01	9.2499E-01
U	1.9371E+01	3.4239E+00	3.4093E+00

SPECIES	MOLE FRACTIONS		
E-	3.3084E-06	6.1831E-04	1.2881E-03
O	2.5548E-01	4.4795E-01	4.7964E-01
O+	4.2237E-07	2.9365E-04	6.3694E-04
O++	8.3477E-30	4.1413E-16	1.7556E-14
N-	4.7659E-06	1.0247E-03	2.0089E-03
N2	1.3845E-01	4.4361E-02	3.9198E-02
N2+	8.8544E-06	2.4755E-04	3.7429E-04
N2-	2.0009E-06	2.1579E-04	3.7594E-04
C	2.9981E-05	3.7797E-02	7.5760E-02
C+	6.2052E-09	3.7859E-04	9.8842E-04
C++	5.7519E-24	1.6661E-12	3.1856E-11
C-	2.5745E-10	4.3821E-05	2.3651E-04
CO	5.3702E-01	4.5324E-01	3.8501E-01
CO+	1.8706E-06	1.0528E-03	1.0998E-03
CO2	7.3707E-02	1.0857E-02	7.3573E-03
C2	3.1124E-08	1.9537E-03	5.2173E-03

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.5487E+02	6.9754E+03	9.7182E+03
T	2.1*64E+01	4.0389E+01	4.5052E+01
PHO	1.5078E+01	8.5575E+01	1.0123E+02
M	-9.2073E-01	-2.5498E+00	-3.1917E+00
A	5.9329E+00	8.6932E+00	9.4309E+00
S	1.9406E+00	2.0797E+00	2.1445E+00
Z	1.7065E+00	2.0182E+00	2.1309E+00
GAME	9.5685E-01	9.2713E-01	9.2645E-01
U	2.0038E+01	3.4367E+00	3.5129E+00

SPECIES	MOLE FRACTIONS		
E-	6.2295E-06	8.8248E-04	1.6956E-03
O	2.9617E-01	4.6484E-01	4.9538E-01
O+	1.0654E-06	4.0644E-04	8.3953E-04
O++	3.6527E-28	1.8790E-15	6.0124E-14
H	8.4269E-04	1.3370E-03	2.4623E-03
O2	1.1808E-01	3.5809E-02	3.6407E-02
O2+	1.2447E-07	2.7711E-04	4.2118E-04
O2-	4.2555E-06	2.5077E-04	4.2399E-04
C	7.4559E-05	5.3437E-02	9.4452E-02
C+	2.6043E-08	5.5169E-04	1.4249E-03
C++	1.4641E-22	5.8699E-12	8.4010E-11
C-	1.3809E-05	1.1299E-04	3.5037E-04
CO	5.3170E-01	4.2494E-01	3.5126E-01
CO+	4.1743E-04	1.3488E-02	2.2467E-02
CO2	5.3544E-02	6.7114E-03	5.9351E-03
C2	1.1098E-07	3.0769E-03	6.7040E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3180E+02	7.6062E+03	1.0562E+04
T	2.4147E+01	4.3542E+01	4.8414E+01
PHO	1.4405E+01	8.2382E+01	9.7009E+01
M	-1.1935E+00	-3.0440E+00	-3.7485E+00
A	6.5510E+00	9.2487E+00	1.0080E+01
S	2.0050E+00	2.1448E+00	2.2130E+00
Z	1.8148E+00	2.1204E+00	2.2489E+00
GAME	9.7850E-01	9.2646E-01	9.3223E-01
U	2.1349E+01	3.7393E+00	3.7243E+00

SPECIES	MOLE FRACTIONS		
E-	2.2709E-05	1.5672E-03	2.7449E-03
O	3.7237E-01	4.5563E-01	5.2437E-01
O+	5.9510E-06	7.0520E-04	1.7873E-03
O++	5.5294E-28	2.2750E-14	5.3699E-13
H	2.4756E-04	2.0399E-03	3.4615E-03
O2	7.5765E-02	3.3652E-02	3.1762E-02
O2+	2.8008E-05	3.4207E-04	5.2455E-04
O2-	7.1455E-06	3.1807E-04	5.1106E-04
C	4.8206E-04	8.8141E-02	1.3205E-01
C+	4.6678E-07	1.2177E-03	2.5998E-03
C++	9.2670E-20	4.3947E-11	4.4570E-10
C-	2.1410E-08	2.7052E-04	6.4959E-04
CO	5.2353E-01	3.6277E-01	2.8406E-01
CO+	2.0207E-05	1.9309E-02	2.8554E-03
CO2	2.6747E-02	5.7487E-03	3.8005E-03
C2	1.5761E-04	5.6450E-03	9.2292E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9287E+02	7.3042E+03	1.0150E+04
T	2.2761E+01	4.2021E+01	4.6737E+01
PHO	1.4742E+01	8.4020E+01	9.9313E+01
M	-1.0551E+00	-2.7926E+00	-3.4764E+00
A	6.2342E+00	8.9711E+00	9.7509E+00
S	1.9722E+00	2.1177E+00	2.1788E+00
Z	1.7621E+00	2.0689E+00	2.1895E+00
GAME	9.5778E-01	9.2575E-01	9.2935E-01
U	2.0457E+01	3.6401E+00	3.5189E+00

SPECIES	MOLE FRACTIONS		
E-	1.1782E-05	1.2022E-03	2.1767E-03
O	3.3597E-01	4.8085E-01	5.1030E-01
O+	2.5511E-06	5.4441E-04	1.0866E-03
O++	1.3672E-24	7.1241E-15	1.8658E-13
H	1.4541E-04	1.6808E-03	2.9473E-03
O2	9.6707E-02	3.6239E-02	3.3985E-02
O2+	2.0063E-05	3.0888E-04	4.7142E-04
O2-	5.5138E-06	2.8538E-04	4.6947E-04
C	1.8728E-04	7.0666E-02	1.1323E-01
C+	1.0907E-07	8.5101E-04	1.0594E-03
C++	3.5274E-21	1.7395E-11	2.0145E-10
C-	5.3726E-05	1.8378E-04	4.8845E-04
CO	5.2857E-01	3.5403E-01	3.1738E-01
CO+	9.2191E-06	1.6478E-03	2.5646E-03
CO2	3.8499E-02	7.0420E-03	4.7682E-03
C2	4.0344E-07	4.3597E-03	8.0732E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7179E+02	7.8828E+03	1.0928E+04
T	2.5718E+01	4.5033E+01	5.0111E+01
PHO	1.4022E+01	8.0497E+01	9.4391E+01
M	-1.3371E+00	-3.3010E+00	-4.0686E+00
A	6.8734E+00	9.5361E+00	1.0420E+01
S	2.0357E+00	2.1774E+00	2.2474E+00
Z	1.8628E+00	2.1744E+00	2.3104E+00
GAME	9.8612E-01	9.2862E-01	9.3774E-01
U	2.1994E+01	3.8557E+00	3.8230E+00

SPECIES	MOLE FRACTIONS		
E-	4.4940E-05	1.9943E-03	2.4202E-03
O	4.0644E-01	5.0584E-01	5.3742E-01
O+	1.3374E-05	8.9910E-04	1.7550E-03
O++	2.0325E-23	6.6509E-14	1.4689E-12
H	4.1807E-05	2.4242E-03	4.0054E-03
O2	5.4809E-02	3.1344E-02	2.9441E-02
O2+	3.6820E-05	3.7755E-04	5.8048E-04
O2-	8.8497E-06	3.4910E-04	5.4797E-04
C	1.2675E-03	1.0611E-01	1.5040E-01
C+	2.0008E-06	1.6676E-03	3.3577E-03
C++	2.1305E-18	1.0192E-10	9.5413E-10
C-	8.9101E-08	3.7654E-04	8.3285E-04
CO	5.1714E-01	3.3086E-01	2.5172E-01
CO+	4.3573E-05	2.2019E-03	3.1137E-03
CO2	1.9121E-02	4.6775E-03	2.9948E-03
C2	6.0720E-04	6.8815E-03	1.0107E-02

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $p_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 4.40E+02 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1287E+07	8.1489E+03	1.1286E+04
T	2.7427E+01	4.6511E+01	5.1864E+01
RHO	1.3649E+01	7.8552E+01	0.1655E+01
M	-1.4847E+00	-2.4478E+00	-4.7779E+00
A	7.1727E+00	9.8218E+00	1.0770E+01
S	2.704E+00	2.7090E+00	2.2816E+00
Z	1.904E+00	2.2304E+00	2.3731E+00
GAME	9.848E-01	0.2181E-01	9.4251E-01
U	2.2622E+00	2.938E+00	3.9471E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	9.0117E-05	2.4954E-03	4.2276E-03
O	4.335E-01	5.2227E-01	5.4963E-01
O+	2.8199E-05	1.1718E-03	2.2076E-03
O++	6.725E-22	1.8154E-13	2.8897E-12
N-	7.0102E-05	2.8320E-03	4.5834E-03
N2	4.1398E-02	2.9212E-02	2.7593E-02
N2+	4.5240E-05	4.1554E-04	6.3999E-04
N2-	1.0751E-05	3.3794E-04	5.8057E-04
C	2.2042E-03	1.2402E-01	1.6817E-01
C+	8.1E-06	1.2044E-03	6.2469E-03
C++	7.0521E-17	2.2064E-10	1.9558E-09
C-	3.7001E-07	5.0003E-04	1.0376E-03
CO	5.1927E-01	2.9921E-01	2.2076E-01
CO+	8.9753E-05	2.4949E-03	3.7346E-03
CO2	1.2149E-02	3.7913E-03	2.3289E-03
C2	2.3792E-05	7.9842E-03	1.0669E-02

 $p_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.9935E+02	8.8088E+03	1.2208E+04
T	3.0806E+01	4.9515E+01	5.5771E+01
RHO	1.3146E+01	7.694E+01	8.765E+01
M	-1.7938E+00	-4.1196E+00	-5.0395E+00
A	7.6143E+00	1.0460E+01	1.1516E+01
S	2.1217E+00	2.2737E+00	2.3495E+00
Z	1.9738E+00	2.3454E+00	2.4999E+00
GAME	9.4354E-01	9.401E-01	9.5120E-01
U	2.3921E+01	4.1628E+00	4.2272E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.0555E-04	3.7627E-03	6.391E-03
O	4.695E-01	5.4727E-01	5.7001E-01
O+	8.8220E-05	1.7643E-03	2.4972E-03
O++	1.543E-10	1.2409E-12	2.7538E-11
O-	1.7003E-04	3.7582E-03	5.9040E-03
N2	3.3612E-02	2.5833E-02	2.3752E-02
N2+	5.7505E-05	5.0612E-04	7.8101E-04
N2-	1.5223E-05	4.3867E-04	6.4200E-04
C	1.5820E-02	1.5881E-01	2.0123E-01
C+	7.6879E-05	3.5866E-03	6.5051E-03
C++	7.3057E-15	5.2699E-10	7.9607E-09
C-	4.0785E-04	8.1108E-04	1.5183E-03
CO	4.875E-01	2.3822E-01	1.5292E-01
CO+	2.7259E-04	2.9126E-03	3.724E-03
CO2	6.0405E-02	2.4487E-02	1.3449E-02
C2	2.2484E-04	9.6314E-03	1.0824E-02

 $p_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 4.80E+02 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5529E+02	8.4452E+03	1.1657E+04
T	2.9177E+01	4.8074E+01	5.3744E+01
RHO	1.3341E+01	7.687E+01	8.9317E+01
M	-1.6365E+00	-3.8371E+00	-4.7023E+00
A	7.4155E+00	1.0179E+01	1.1138E+01
S	2.0940E+00	2.2420E+00	2.3159E+00
Z	1.9402E+00	2.2875E+00	2.4268E+00
GAME	9.7142E-01	0.3574E-01	9.4719E-01
U	2.3276E+01	4.0457E+00	4.0869E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7409E-04	3.0783E-03	5.2097E-03
O	4.5405E-01	5.2582E-01	5.6058E-01
O+	5.3317E-05	1.4149E-03	2.7790E-03
O++	1.3140E-20	4.7756E-13	1.0335E-11
O-	1.1295E-04	3.2729E-03	5.2152E-03
N2	3.0477E-02	2.7500E-02	2.5616E-02
N2+	5.2132E-05	4.577E-04	7.0630E-04
N2-	1.2880E-05	4.0774E-04	6.1149E-04
C	7.8377E-03	1.416E-01	1.8529E-01
C+	2.8268E-05	2.8397E-03	5.2959E-03
C++	7.9219E-14	4.5768E-10	3.967E-09
C-	1.3726E-06	6.4508E-04	1.2671E-03
CO	4.9862E-01	2.6825E-01	1.9122E-01
CO+	1.6749E-04	2.6516E-03	3.5222E-03
CO2	8.3246E-03	3.0570E-03	1.7812E-02
C2	8.2347E-05	8.0111E-03	1.0908E-02

 $p_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.4514E+02	9.2465E+03	1.2833E+04
T	3.2228E+01	5.1309E+01	5.8002E+01
RHO	1.3057E+01	7.4964E+01	8.6342E+01
M	-1.0555E+00	-4.4129E+00	-5.3922E+00
A	7.7050E+00	1.0795E+01	1.1908E+01
S	2.1487E+00	2.3048E+00	2.3830E+00
Z	2.0078E+00	2.4040E+00	2.5625E+00
GAME	9.3570E-01	0.4475E-01	9.5402E-01
U	2.4601E+01	4.2513E+00	4.278E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	4.8236E-04	4.5707E-03	7.8414E-03
O	4.8227E-01	5.5784E-01	5.779E-01
O+	1.3058E-04	2.1987E-03	4.4164E-03
O++	1.0938E-18	3.2157E-12	7.4701E-11
O-	2.3805E-04	4.2530E-03	6.6624E-03
N2	1.9464E-02	2.4387E-02	2.1944E-02
N2+	6.2168E-05	5.6149E-04	8.6582E-04
N2-	1.7784E-05	4.7117E-04	6.7160E-04
C	2.6962E-02	1.7527E-01	2.1602E-01
C+	1.6364E-04	4.6584E-03	7.9038E-03
C++	4.0549E-14	1.9451E-09	1.5997E-08
C-	9.5567E-05	9.9976E-04	1.7913E-03
CO	4.6470E-01	2.0578E-01	1.3874E-01
CO+	2.9137E-04	2.1176E-03	3.7804E-03
CO2	4.6442E-02	1.9478E-03	9.9620E-04
C2	4.7008E-04	1.0113E-02	1.0423E-02

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 7.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.9258E+02	9.7423E+03	1.3551E+04
T	3.3494E+01	5.3119E+01	6.0355E+01
RHO	1.3038E+01	7.4473E+01	8.5656E+01
H	-2.1219E+00	-4.7162E+00	-5.7595E+00
A	7.9866E+00	1.1143E+01	1.2293E+01
S	2.1754E+00	2.3356E+00	2.4151E+00
Z	2.0439E+00	2.4627E+00	2.6213E+00
GAME	9.3128E-01	9.4921E-01	9.5514E-01
U	2.5282E+01	4.4744E+00	4.5784E+00

SPECIES	MOLE FRACTIONS		
E-	6.9612E-04	5.5249E-03	9.5374E-03
O	4.9765E-01	5.6722E-01	5.8400E-01
O+	1.7853E-04	2.7401E-03	5.5373E-03
O++	5.2223E-18	8.3444E-12	1.9735E-10
O-	3.1438E-04	4.8817E-03	7.4527E-03
O2	1.6871E-02	2.2935E-02	2.0255E-02
O2+	6.6792E-05	6.2373E-04	9.5700E-04
O2-	2.0518E-05	5.0368E-04	6.9810E-04
C	4.0324E-02	1.9093E-01	2.2885E-01
C+	2.9114E-04	5.4710E-03	9.4238E-03
C++	1.5653E-13	3.6515E-09	3.1237E-08
C-	1.8564E-05	1.2106E-03	2.0674E-03
CO	4.4248E-01	1.8280E-01	1.1688E-01
CO+	5.1313E-04	3.2957E-03	3.8374E-03
CO2	3.7330E-03	1.5224E-03	3.3644E-04
C2	8.4143E-04	1.0327E-02	9.7683E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 7.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.9200E+02	1.0566E+04	1.5178E+04
T	3.5661E+01	5.7052E+01	6.5530E+01
RHO	1.3107E+01	7.3858E+01	8.4826E+01
H	-2.4688E+00	-5.2511E+00	-6.5316E+00
A	8.3611E+00	1.1852E+01	1.3054E+01
S	2.2281E+00	2.3053E+00	2.4784E+00
Z	2.1274E+00	2.5764E+00	2.7305E+00
GAME	9.2476E-01	9.5579E-01	9.5223E-01
U	2.6646E+01	4.7379E+00	4.8659E+00

SPECIES	MOLE FRACTIONS		
E-	1.2700E-03	8.7159E-03	1.3942E-02
O	5.1482E-01	5.8212E-01	5.9132E-01
O+	2.9237E-04	4.2215E-03	8.5917E-03
O++	5.9702E-17	5.4029E-11	1.2113E-05
O-	4.8851E-04	6.1739E-03	9.0937E-03
O2	1.3917E-02	2.0108E-02	1.7008E-02
O2+	7.7079E-05	7.6441E-04	1.1524E-03
O2-	2.6480E-05	5.6212E-04	7.3177E-04
C	7.0577E-02	2.1872E-01	2.4953E-01
C+	5.6587E-04	7.8994E-03	1.2835E-02
C++	1.1855E-12	1.3484E-08	1.1244E-07
C-	4.8864E-05	1.6764E-03	2.5971E-03
CO	3.9274E-01	1.3555E-01	8.1118E-02
CO+	7.4947E-04	3.5427E-03	3.7851E-03
CO2	2.5023E-02	5.0056E-04	3.8264E-04
C2	1.7073E-03	9.9789E-03	7.9089E-02

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 7.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.4157E+02	1.0284E+04	1.4340E+04
T	3.4621E+01	5.5025E+01	6.7884E+01
RHO	1.3062E+01	7.4168E+01	8.5159E+01
H	-2.2930E+00	-5.0292E+00	-6.1402E+00
A	8.1735E+00	1.1496E+01	1.2678E+01
S	2.2018E+00	2.3555E+00	2.4470E+00
Z	2.0821E+00	2.5200E+00	2.6778E+00
GAME	9.2677E-01	9.5300E-01	9.5450E-01
U	2.5965E+01	4.5807E+00	4.7038E+00

SPECIES	MOLE FRACTIONS		
E-	5.4274E-04	6.6644E-03	1.1574E-02
O	5.3441E-01	5.7529E-01	5.8848E-01
O+	2.3215E-04	2.4071E-03	6.9270E-03
O++	1.9225E-17	2.1209E-11	5.1757E-10
O-	3.9754E-04	5.5081E-03	8.2754E-03
O2	1.5145E-02	2.1528E-02	1.8594E-02
O2+	7.1713E-05	6.9100E-04	1.0539E-03
O2-	2.3420E-05	5.3462E-04	7.1859E-04
C	5.5054E-02	2.0571E-01	2.4011E-01
C+	4.5874E-04	6.6121E-03	1.1090E-02
C++	4.6807E-12	7.0598E-09	6.0178E-08
C-	3.1573E-05	1.4371E-03	2.7420E-03
CO	4.1822E-01	1.5814E-01	9.7563E-02
CO+	4.3304E-04	3.4704E-03	3.8387E-03
CO2	2.0867E-03	1.1804E-03	5.3173E-04
C2	1.7859E-03	1.0264E-02	8.8985E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 8.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0438E+03	1.1451E+04	1.6059E+04
T	3.6644E+01	5.9191E+01	6.8290E+01
RHO	1.3161E+01	7.3540E+01	8.4602E+01
H	-2.6491E+00	-5.6816E+00	-6.5363E+00
A	8.5626E+00	1.2209E+01	1.3423E+01
S	2.2544E+00	2.4247E+00	2.5097E+00
Z	2.1645E+00	2.6207E+00	2.7796E+00
GAME	9.2440E-01	9.5720E-01	9.4914E-01
U	2.7352E+01	4.9021E+00	4.0378E+00

SPECIES	MOLE FRACTIONS		
E-	1.5315E-03	9.6084E-03	1.6670E-02
O	5.2495E-01	5.8762E-01	5.9267E-01
O+	3.6033E-04	5.2185E-03	1.0561E-02
O++	1.6510E-16	1.3481E-10	3.7051E-09
O-	5.8628E-04	6.8655E-03	9.8877E-03
O2	1.2900E-02	1.8691E-02	1.5496E-02
O2+	8.2940E-05	8.4145E-04	1.2504E-03
O2-	2.9688E-05	5.2489E-04	7.3656E-04
C	8.6444E-02	2.4032E-01	2.5724E-01
C+	9.1308E-04	9.3188E-03	1.4624E-02
C++	2.4904E-12	2.5284E-08	2.0381E-07
C-	7.0783E-05	1.9208E-03	2.8222E-03
CO	3.6653E-01	1.1574E-01	6.7214E-02
CO+	8.6190E-04	3.6007E-03	3.6813E-03
CO2	2.2161E-03	6.7871E-04	2.7365E-04
C2	2.3272E-03	9.3826E-03	6.8733E-03

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 8.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0970E+03	1.2066E+04	1.6967E+04
T	3.7591E+01	6.1435E+01	7.1117E+01
RHO	1.3216E+01	7.3214E+01	8.4460E+01
H	-2.8341E+00	-6.0205E+00	-7.3498E+00
A	8.7633E+00	1.2559E+01	1.3782E+01
S	2.2806E+00	2.4537E+00	2.5396E+00
Z	2.2081E+00	2.6825E+00	2.8247E+00
GAME	9.2517E-01	9.5708E-01	9.4559E-01
U	2.8046E+01	5.0660E+00	5.2017E+00

SPECIES	MOLE FRACTIONS		
E-	1.8774E-03	1.1472E-02	1.9734E-02
O	5.3481E-01	5.9175E-01	5.9266E-01
O+	4.3784E-04	6.4202E-03	1.2824E-02
O++	4.2066E-16	3.2930E-10	7.4539E-09
N	6.9160E-04	7.5702E-03	1.0626E-02
N2	1.2252E-02	1.7293E-02	1.4081E-02
O2+	8.9400E-05	9.2088E-04	1.3440E-03
O2-	3.3028E-05	6.0203E-04	7.3785E-04
C	1.0244E-01	2.4062E-01	2.6331E-01
C+	1.2021E-03	1.0852E-02	1.6394E-02
C++	5.6108E-12	4.6442E-08	3.5553E-07
C-	9.7474E-05	2.1509E-03	3.0060E-03
CO	3.4027E-01	9.7565E-02	5.6888E-02
CO+	9.7018E-04	3.6121E-03	3.369E-03
CO2	1.8961E-03	5.0556E-04	1.9572E-04
C2	2.8861E-03	8.6500E-03	5.8686E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2072E+03	1.3324E+04	1.8837E+04
T	3.9443E+01	6.6183E+01	7.6928E+01
RHO	1.3310E+01	7.2500E+01	8.4298E+01
H	-3.2176E+00	-6.7723E+00	-8.2049E+00
A	9.1800E+00	1.2234E+01	1.4488E+01
S	2.3331E+00	2.5105E+00	2.5986E+00
Z	2.2956E+00	2.7768E+00	2.9047E+00
GAME	9.2909E-01	9.5294E-01	9.3932E-01
U	2.9431E+01	5.4108E+00	5.5175E+00

SPECIES	MOLE FRACTIONS		
E-	2.6933E-03	1.6087E-02	2.6849E-02
O	5.5377E-01	5.9608E-01	5.8930E-01
O+	6.2981E-04	9.5153E-03	1.8227E-02
O++	2.3318E-15	1.7955E-09	3.4847E-08
N	9.2681E-04	8.9487E-03	1.1867E-02
N2	1.1093E-02	1.4619E-02	1.1535E-02
O2+	1.0410E-04	1.0803E-03	1.5085E-03
O2-	4.0020E-05	6.1665E-04	7.0159E-04
C	1.3420E-01	2.5662E-01	2.7137E-01
C+	1.9188E-03	1.4144E-02	1.9751E-02
C++	2.0796E-11	1.4504E-07	9.7113E-07
C-	1.6617E-04	2.5904E-03	3.2351E-03
CO	2.8754E-01	6.9019E-02	3.8282E-02
CO+	1.1736E-03	3.5022E-03	3.1642E-03
CO2	1.3891E-03	2.7418E-04	1.0057E-04
C2	3.4286E-03	6.9058E-03	4.1065E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 8.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1515E+03	1.2689E+04	1.7895E+04
T	3.8520E+01	6.3759E+01	7.4000E+01
RHO	1.3267E+01	7.2798E+01	8.4268E+01
H	-3.0225E+00	-6.2472E+00	-7.7728E+00
A	8.9688E+00	1.2906E+01	1.4137E+01
S	2.3069E+00	2.4828E+00	2.5644E+00
Z	2.2532E+00	2.7321E+00	2.8662E+00
GAME	9.2478E-01	9.5553E-01	9.4220E-01
U	2.8739E+01	5.2409E+00	5.3617E+00

SPECIES	MOLE FRACTIONS		
E-	2.2678E-03	1.2663E-02	2.3130E-02
O	5.4444E-01	5.9460E-01	5.9149E-01
O+	5.268E-04	7.6680E-03	1.5381E-02
O++	1.0109E-15	7.9049E-10	1.6508E-08
N	8.0494E-04	8.2771E-03	1.1291E-02
N2	1.1344E-02	1.4902E-02	1.2762E-02
O2+	9.6433E-05	1.0016E-03	1.4308E-03
O2-	3.6480E-05	6.1220E-04	7.2099E-04
C	1.1842E-01	2.4950E-01	2.6795E-01
C+	1.5359E-03	1.2497E-02	1.8111E-02
C-	1.1034E-11	8.3840E-08	5.9791E-07
CO	1.2919E-04	2.3895E-03	3.1440E-03
CO+	3.1398E-01	8.1948E-02	4.6154E-02
CO2	1.0742E-03	3.4758E-03	3.3614E-03
C2	1.6243E-03	3.7147E-04	1.4014E-04
C2	3.4228E-03	7.7985E-03	4.9379E-03

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 8.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2442E+03	1.2564E+04	1.9790E+04
T	4.0372E+01	6.8663E+01	7.9875E+01
RHO	1.3342E+01	7.2149E+01	8.4261E+01
H	-3.4161E+00	-7.0523E+00	-8.6470E+00
A	9.3594E+00	1.3559E+01	1.4836E+01
S	2.3554E+00	2.5383E+00	2.6772E+00
Z	2.3471E+00	2.8192E+00	2.9404E+00
GAME	9.3198E-01	9.4672E-01	9.3716E-01
U	3.0121E+01	5.5783E+00	5.6740E+00

SPECIES	MOLE FRACTIONS		
E-	3.1765E-03	1.8855E-02	3.0845E-02
O	5.6277E-01	5.9443E-01	5.8627E-01
O+	7.4978E-04	1.1438E-02	2.1325E-02
O++	5.2318E-15	3.9760E-09	6.9946E-08
N	1.0578E-03	9.5506E-03	1.2342E-02
N2	1.0598E-02	1.3374E-02	1.0407E-02
O2+	1.1247E-04	1.1571E-03	1.5753E-03
O2-	4.3616E-05	6.1420E-04	6.7605E-04
C	1.4668E-01	2.4245E-01	2.7374E-01
C+	2.3561E-03	1.5837E-02	2.1286E-02
C-	3.8014E-11	7.4564E-07	1.5226E-06
CO	2.0644E-04	2.7630E-03	3.2812E-03
CO+	2.6240E-01	5.7888E-02	3.1830E-02
CO2	1.2682E-03	3.3916E-03	2.9560E-03
C2	1.1830E-03	2.0077E-04	7.2487E-04
C2	4.3473E-03	6.0110E-03	3.3894E-03

TABLE I.- Continued

$$p_1 = .200 \text{ kN/m}^2$$

P1 = 2.00E+05 N/SQ-M, US1= 9.00E+02 M/SEC

P1 = 2.00E+05 N/SQ-M, US1= 9.20E+02 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3224E+03	1.4607E+04	2.0733E+04
T	4.1320E+01	7.1197E+01	8.2891E+01
RHO	1.3359E+01	7.1780E+01	8.4086E+01
H	-3.6192E+00	-7.4558E+00	-9.0945E+00
A	9.6229E+00	1.3877E+01	1.5190E+01
S	7.2858E+00	2.5677E+00	2.6558E+00
Z	2.3957E+00	2.8585E+00	2.8746E+00
GAME	9.3432E-01	9.4634E-01	9.3578E-01
U	3.0808E+01	5.7470E+00	7.8157E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3815E+03	1.5258E+04	2.1692E+04
T	4.2287E+01	7.3770E+01	8.5945E+01
RHO	1.3367E+01	7.1442E+01	8.3935E+01
H	-3.8268E+00	-7.8350E+00	-9.5545E+00
A	9.8544E+00	1.4193E+01	1.5547E+01
S	2.4119E+00	2.5929E+00	2.6839E+00
Z	2.4447E+00	2.8951E+00	3.0071E+00
GAME	9.3936E-01	9.4316E-01	9.3521E-01
U	3.1495E+01	5.9018E+00	5.9657E+00

SPECIES	MOLE FRACTIONS		
E-	3.7246E-03	2.1979E-02	3.5217E-02
O	5.7147E-01	5.8572E-01	5.8246E-01
O+	8.9126E-06	1.3617E-02	2.4733E-02
O++	1.1573E-14	8.4592E-09	1.3580E-07
O-	1.1990E-03	1.0178E-02	1.2711E-02
O2	1.0127E-02	1.2201E-02	9.2371E-03
O2+	1.2150E-04	1.2294E-02	1.6292E-03
O2-	4.7230E-05	6.3541E-04	6.4331E-04
C	1.6485E-01	2.6701E-01	2.7528E-01
C+	2.8575E-03	1.7515E-02	2.2751E-02
C++	6.8181E-11	4.0383E-07	2.3331E-06
C-	2.5701E-04	2.9022E-03	3.2849E-03
CO	2.7332E-01	4.8536E-02	2.6394E-02
CO+	1.3575E-03	3.2526E-03	2.7371E-03
CO2	1.0901E-02	1.4584E-04	5.2195E-05
C2	4.7844E-02	5.1602E-02	2.7679E-03

SPECIES	MOLE FRACTIONS		
E-	4.3417E-03	2.5907E-02	3.9875E-02
O	5.7943E-01	5.9404E-01	5.7798E-01
O+	1.0572E-02	1.6060E-02	2.8390E-02
O++	2.5183E-14	1.7735E-08	2.3588E-07
O-	1.3496E-03	1.0705E-02	1.2970E-02
O2	9.6748E-03	1.1105E-02	8.3532E-03
O2+	1.3130E-04	1.2965E-03	1.6703E-03
O2-	5.0813E-05	5.9127E-04	6.0647E-04
C	1.7941E-01	2.7044E-01	2.7607E-01
C+	3.4243E-02	1.9156E-02	2.4117E-02
C++	1.1993E-10	6.4548E-07	3.4824E-06
C-	3.1054E-04	3.0040E-03	3.2525E-03
CO	2.1223E-01	4.0699E-02	2.1909E-02
CO+	1.4402E-02	3.0929E-03	2.5191E-03
CO2	8.3983E-04	1.0748E-04	3.7661E-05
C2	5.1049E-03	4.3788E-03	2.2489E-03

P1 = 2.00E+05 N/SQ-M, US1= 9.40E+03 M/SEC

P1 = 2.00E+05 N/SQ-M, US1= 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4425E+03	1.5901E+04	2.2637E+04
T	4.3294E+01	7.6377E+01	8.9033E+01
RHO	1.3357E+01	7.1068E+01	8.3680E+01
H	-4.0389E+00	-8.2214E+00	-1.0022E+01
A	1.0096E+01	1.4506E+01	1.5908E+01
S	2.4381E+00	2.6197E+00	2.7116E+00
Z	2.4944E+00	2.9294E+00	3.0383E+00
GAME	9.4379E-01	9.4044E-01	9.3545E-01
U	3.2178E+01	6.0570E+00	6.1117E+00

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5043E+03	1.6577E+04	2.3569E+04
T	4.4246E+01	7.5013E+01	9.2168E+01
RHO	1.3331E+01	7.0663E+01	8.3324E+01
H	-4.2555E+00	-8.6153E+00	-1.0499E+01
A	1.0346E+01	1.4819E+01	1.6275E+01
S	2.4642E+00	2.4662E+00	2.7390E+00
Z	2.5445E+00	2.5519E+00	3.0689E+00
GAME	9.4865E-01	9.3832E-01	9.3455E-01
U	3.2858E+01	6.2281E+00	6.2577E+00

SPECIES	MOLE FRACTIONS		
E-	5.0515E-03	2.8978E-02	4.4831E-02
O	5.8739E-01	5.9157E-01	5.7290E-01
O+	1.2560E-03	1.8756E-02	3.2284E-02
O++	5.4779E-14	3.4142E-08	4.5697E-07
O-	1.5119E-03	1.1154E-02	1.3114E-02
O2	9.2207E-02	1.0080E-02	7.4414E-03
O2+	1.4194E-04	1.3560E-03	1.6567E-03
O2-	5.4213E-05	5.7186E-04	5.6563E-04
C	1.9349E-01	2.7290E-01	2.7623E-01
C+	4.0748E-03	2.0739E-02	2.5402E-02
C++	2.0959E-10	1.0030E-06	5.0800E-06
C-	3.7119E-04	3.0681E-03	3.1879E-03
CO	1.8988E-01	3.4147E-02	1.8183E-02
CO+	1.5161E-03	2.9185E-03	2.3050E-03
CO2	6.9721E-04	7.8777E-05	2.7203E-05
C2	5.3445E-02	3.6812E-02	1.8188E-03

SPECIES	MOLE FRACTIONS		
E-	5.8710E-03	3.2937E-02	5.0095E-02
O	5.9463E-01	5.8835E-01	5.6728E-01
O+	1.4951E-02	2.1702E-02	3.6414E-02
O++	1.1953E-13	6.4817E-08	7.9910E-07
O-	1.6840E-03	1.1522E-02	1.3144E-02
O2	8.7603E-03	9.1261E-03	6.5972E-03
O2+	1.5352E-04	1.4070E-02	1.7084E-03
O2-	5.7666E-05	5.4799E-04	5.2193E-04
C	2.0692E-01	2.7452E-01	2.7586E-01
C+	4.8159E-02	2.2255E-02	2.6622E-02
C++	3.6459E-10	1.5190E-06	7.2724E-06
C-	4.3749E-04	3.0964E-03	3.0967E-03
CO	1.5752E-01	2.8664E-02	1.5077E-02
CO+	1.5829E-03	2.7353E-03	2.0976E-03
CO2	5.7153E-04	5.7833E-05	1.9642E-05
C2	5.4884E-03	3.0713E-03	1.4649E-03

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+05 N/SC-M, US1= 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.8671E+03	1.7199E+04	2.4482E+04
T	4.5454E+01	8.1678E+01	9.8356E+01
RHO	1.3288E+01	7.0192E+01	8.2850E+01
H	-4.4766E+00	-9.0159E+00	-1.0984E+01
A	1.0407E+01	1.5133E+01	1.6650E+01
S	2.4902E+00	2.6726E+00	2.7661E+00
Z	2.5945E+00	2.9928E+00	3.0990E+00
GAME	9.5397E-01	9.3694E-01	9.3819E-01
U	3.3522E+01	6.3590E+00	6.4049E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	6.8241E-02	3.7190E-02	5.5666E-02
O	6.0128E-01	5.8446E-01	5.6113E-01
O+	1.7851E-02	2.4899E-02	4.0768E-02
O++	2.6274E-12	1.1901E-07	1.3599E-06
-	1.8726E-03	1.1803E-02	1.3064E-02
O2	8.2892E-03	8.2349E-03	5.8187E-03
O2+	1.6605E-04	1.4484E-02	1.7054E-03
O2-	6.0794E-05	5.2015E-04	4.7646E-04
C	2.1942E-01	2.7345E-01	2.7501E-01
C+	5.6744E-03	2.3705E-02	2.7794E-02
C++	6.3542E-10	2.2487E-06	1.0242E-05
C-	5.1040E-04	3.0916E-03	2.9839E-03
CO	1.4632E-01	2.4058E-02	1.2489E-02
CO+	1.6423E-03	2.5474E-03	1.8996E-03
CO2	4.6177E-04	4.2481E-05	1.4169E-05
C2	5.5324E-03	2.5453E-03	1.1759E-03

P1 = 2.00E+05 N/SC-M, US1= 1.0E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7956E+03	1.9299E+04	2.7491E+04
T	4.0976E+01	9.1186E+01	1.0704E+02
RHO	1.2998E+01	6.8097E+01	8.0145E+01
H	-5.2853E+00	-1.0475E+01	-1.2756E+01
A	1.1555E+01	1.5256E+01	1.8050E+01
S	2.5800E+00	2.7425E+00	2.8592E+00
Z	2.7642E+00	3.0936E+00	3.2046E+00
GAME	9.7320E-01	9.3684E-01	9.4079E-01
U	3.5844E+01	6.8951E+00	6.9412E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.1754E-02	5.4185E-02	7.7661E-02
O	6.1864E-01	5.6453E-01	5.7575E-01
O+	2.4510E-02	2.7845E-02	5.7711E-02
O++	4.7235E-12	7.8628E-07	7.3756E-06
-	2.6300E-03	1.2085E-02	1.2004E-02
O2	6.5277E-03	5.6044E-03	3.5790E-03
O2+	2.1909E-04	1.5112E-02	1.5897E-03
O2-	6.8754E-05	4.0458E-04	3.1769E-04
C	2.5619E-01	2.7443E-01	2.6890E-01
C+	9.8347E-03	2.8261E-02	3.1789E-02
C++	4.6713E-09	7.5971E-06	3.0902E-05
C-	8.0460E-04	2.8713E-03	2.4807E-03
CO	8.3036E-02	1.3055E-02	6.3441E-03
CO+	1.7553E-03	1.9117E-03	1.2972E-03
CO2	1.8940E-04	1.4586E-05	4.4267E-06
C2	4.8911E-03	1.2787E-03	5.3295E-04

P1 = 2.00E+05 N/SC-M, US1= 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6311E+03	1.7770E+04	2.5276E+04
T	4.6638E+01	8.4249E+01	9.8608E+01
RHO	1.3225E+01	6.9706E+01	8.2247E+01
H	-4.7021E+00	-9.4245E+00	-1.1479E+01
A	1.0878E+01	1.5447E+01	1.7036E+01
S	2.5161E+00	2.6984E+00	2.7930E+00
Z	2.6443E+00	3.0223E+00	3.1289E+00
GAME	9.5956E-01	9.3604E-01	9.4064E-01
U	3.4205E+01	6.5019E+00	6.5539E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	7.9467E-02	4.1677E-02	6.1559E-02
O	6.0727E-01	5.8002E-01	5.5447E-01
O+	2.1412E-02	2.9301E-02	4.5249E-02
O++	5.8660E-12	2.1073E-07	2.2618E-06
-	2.0727E-03	1.1995E-02	1.2879E-02
O2	7.8022E-03	7.4165E-03	5.1022E-03
O2+	1.7971E-04	1.4798E-03	1.6883E-03
O2-	6.3622E-05	4.8985E-04	4.3018E-04
C	2.3141E-01	2.7576E-01	2.7373E-01
C+	5.6610E-03	2.5070E-02	2.8938E-02
C++	1.1179E-09	3.2494E-06	1.4235E-05
C-	5.8944E-04	3.0583E-03	2.8537E-03
CO	1.2674E-01	2.0231E-02	1.0317E-02
CO+	1.6904E-03	2.3617E-03	1.7121E-03
CO2	3.6662E-04	3.1342E-05	1.0196E-05
C2	5.4733E-03	2.1029E-03	9.4071E-04

P1 = 2.00E+05 N/SC-M, US1= 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9666E+03	2.0521E+04	2.9458E+04
T	5.3965E+01	9.8232E+01	1.1602E+02
RHO	1.2591E+01	6.6079E+01	7.7320E+01
H	-5.8961E+00	-1.1566E+01	-1.4097E+01
A	1.2320E+01	1.7103E+01	1.9193E+01
S	2.6420E+00	2.8253E+00	2.9241E+00
Z	2.8711E+00	3.1633E+00	3.2828E+00
GAME	9.8107E-01	9.4136E-01	9.6290E-01
U	3.7496E+01	7.2177E+00	7.3652E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.7626E-02	6.8371E-02	9.5723E-02
O	6.2361E-01	5.5014E-01	5.1411E-01
O+	5.7278E-02	4.8686E-02	7.1310E-02
O++	4.1869E-11	2.5447E-06	2.1771E-05
-	3.2492E-03	1.1661E-02	1.0682E-02
O2	5.2399E-03	4.1293E-03	2.4151E-03
O2+	2.6632E-04	1.4778E-03	1.4286E-03
O2-	7.0188E-05	3.1653E-04	2.1960E-04
C	2.7237E-01	2.7072E-01	2.6201E-01
C+	1.4264E-02	3.1222E-02	3.4835E-02
C++	2.0416E-08	1.6302E-05	6.3883E-05
C-	1.0423E-03	2.5865E-03	2.0821E-03
CO	5.0848E-02	8.3847E-03	3.8398E-03
CO+	1.7309E-03	6.1508E-03	9.6119E-04
CO2	8.6775E-05	6.7724E-06	1.8815E-06
C2	3.8696E-03	7.6560E-04	2.9839E-04

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.15E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1447E+03	2.1798E+04	3.1403E+04
T	5.8521E+01	1.0553E+02	1.2566E+02
RHO	1.2376E+01	6.3889E+01	7.4200E+01
M	-6.5349E+00	-1.2701E+01	-1.5504E+01
A	1.3017E+01	1.7996E+01	2.0357E+01
S	2.7017E+00	2.8858E+00	2.9871E+00
Z	2.9614E+00	3.2333E+00	3.3679E+00
GAME	9.7769E-01	9.4922E-01	9.7914E-01
U	3.9115E+01	7.5872E+00	7.8706E+00

SPECIES	MOLE FRACTIONS		
E-	2.4155E-02	8.3517E-02	1.149E-01
O	6.2126E-01	5.2139E-01	4.8983E-01
O+	9.4452E-03	6.0422E-02	8.4914E-02
O++	2.6013E-10	7.3141E-06	5.9044E-05
O-	3.8615E-02	1.0847E-02	9.1285E-03
O2	4.0914E-02	2.9796E-03	1.4758E-03
O2+	3.1924E-04	1.3937E-03	1.2331E-02
O2-	6.7780E-05	2.3706E-04	1.4356E-04
C	2.7907E-01	2.6531E-01	2.4338E-01
C+	1.9918E-02	3.4069E-02	3.8246E-02
C++	8.5408E-08	3.2684E-05	1.7712E-04
C-	1.2477E-03	2.2618E-03	1.7009E-03
CO	3.0114E-02	5.3823E-02	2.7964E-02
CO+	1.6261E-02	1.1762E-03	7.0062E-04
CO2	3.7151E-05	3.1615E-04	7.8882E-07
C2	2.7589E-02	4.5750E-04	1.6647E-04

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.20E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2308E+03	2.3151E+04	3.3542E+04
T	6.3344E+01	1.1326E+02	1.3618E+02
RHO	1.2120E+01	6.1833E+01	7.1218E+01
M	-7.7020E+00	-1.3889E+01	-1.7000E+01
A	1.2630E+01	1.8961E+01	2.1668E+01
S	2.7585E+00	2.9444E+00	3.0484E+00
Z	3.0261E+00	3.3058E+00	3.4585E+00
GAME	9.5727E-01	9.6019E-01	9.6688E-01
U	4.074CF+01	7.9564E+00	8.2644E+00

SPECIES	MOLE FRACTIONS		
E-	3.7202E-02	1.0078E-01	1.2678E-01
O	6.1247E-01	5.1045E-01	4.6319E-01
O+	1.4969E-02	7.3341E-02	1.0131E-01
O++	2.5425E-09	1.9358E-05	1.4940E-04
O-	4.3757E-02	9.7650E-03	7.5407E-02
O2	3.1844E-02	2.1904E-03	9.9874E-04
O2+	7.7257E-04	1.2723E-03	1.0275E-03
O2-	6.2778E-05	1.7046E-04	8.9728E-05
C	2.7824E-01	2.5852E-01	2.4322E-01
C+	2.4203E-02	3.6970E-02	4.2140E-02
C++	3.0977E-07	6.2768E-05	2.4535E-04
C-	1.3744E-02	1.9311E-03	1.3611E-02
CO	1.8175E-02	2.4361E-02	1.3605E-02
CO+	1.4747E-02	9.0315E-04	5.0371E-04
CO2	1.6157E-05	1.4716E-06	7.2812E-07
C2	1.8586E-03	2.7266E-04	5.2891E-05

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.25E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5255E+03	2.4625E+04	2.5932E+04
T	6.8201E+01	1.2149E+02	1.4746E+02
RHO	1.1935E+01	5.9940E+01	6.8440E+01
M	-7.8578E+00	-1.5119E+01	-1.8781E+01
A	1.4229E+01	2.0001E+01	2.3045E+01
S	2.8164E+00	3.0008E+00	3.1072E+00
Z	3.1026E+00	3.3816E+00	3.551E+00
GAME	9.5686E-01	9.7275E-01	1.0130E+00
U	4.2378E+01	8.4484E+00	8.9109E+00

SPECIES	MOLE FRACTIONS		
E-	5.0182E-02	1.1870E-01	1.5900E-01
O	5.9951E-01	4.8778E-01	4.3502E-01
O+	2.2234E-02	8.6800E-02	1.1695E-01
O++	1.3850E-08	4.7628E-05	3.4819E-04
O-	4.7573E-03	8.5422E-03	6.0830E-03
O2	2.4008E-02	1.4404E-03	6.2380E-04
O2+	4.2081E-04	1.1284E-03	8.3264E-04
O2-	6.6133E-05	1.1834E-04	4.4657E-05
C	2.7309E-01	2.4042E-01	2.3186E-01
C+	3.2452E-02	4.4040E-02	4.6495E-02
C++	9.3470E-07	1.1624E-04	4.371E-04
C-	1.4266E-02	1.6188E-03	1.0780E-03
CO	1.1478E-02	2.1865E-02	8.0912E-03
CO+	1.3072E-03	6.8644E-04	3.6015E-04
CO2	7.4454E-06	6.8339E-07	1.3859E-07
C2	1.2282E-02	1.6296E-04	5.2615E-05

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.20E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7292E+03	2.6256E+04	3.8458E+04
T	7.2930E+01	1.2019E+02	1.5946E+02
RHO	1.1824E+01	5.8281E+01	6.6278E+01
M	-8.6226E+00	-1.6408E+01	-2.0264E+01
A	1.4804E+01	2.1105E+01	2.4448E+01
S	2.8674E+00	3.0543E+00	3.1640E+00
Z	3.1645E+00	3.4604E+00	3.6579E+00
GAME	9.4950E-01	9.8856E-01	1.0248E+00
U	4.4036E+01	8.9489E+00	9.5465E+00

SPECIES	MOLE FRACTIONS		
E-	6.4243E-02	1.2724E-01	1.8182E-01
O	5.8220E-01	4.6404E-01	4.0593E-01
O+	3.0953E-02	1.0050E-01	1.2235E-01
O++	4.8124E-08	1.0885E-04	7.4423E-04
O-	4.5759E-02	7.3049E-03	4.8409E-02
O2	1.9914E-02	9.8828E-04	3.8829E-04
O2+	4.4009E-04	9.7494E-04	5.6049E-04
O2-	4.9559E-05	8.0152E-05	3.2996E-05
C	2.6553E-01	2.4184E-01	2.1961E-01
C+	3.8142E-02	4.3224E-02	5.1199E-02
C++	2.3420E-04	2.0710E-04	7.9795E-04
C-	1.4155E-02	1.3413E-02	8.5100E-04
CO	7.5528E-02	1.3942E-02	4.8730E-04
CO+	1.1441E-03	5.1926E-04	2.7737E-04
CO2	2.7017E-06	2.7224E-07	6.0246E-08
C2	8.1690E-04	9.8544E-05	3.6502E-05

TABLE I.-Continued

$$p_1 = 200 \text{ kN/m}^2$$

P1 = 2.00E+05 N/SC-M, US1 = 1.35E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9613E+02	2.7565E+04	4.1569E+04
T	7.7601E+01	1.2944E+02	1.7165E+02
RHO	1.1745E+01	5.4583E+01	6.4324E+01
M	-9.3741E+00	-1.7744E+01	-2.2019E+01
A	1.5385E+01	2.2259E+01	2.5807E+01
S	2.9193E+00	3.1044E+00	3.2184E+00
Z	2.2270E+00	3.5444E+00	3.7444E+00
GAME	9.4524E-01	1.0024E+00	1.0307E+00
U	4.5701E+01	9.5015E+00	1.0179E+01

SPECIES	MOLE FRACTIONS		
E-	7.9281E-02	1.5659E-01	2.0446E-01
O	5.4731E-01	4.3911E-01	3.7707E-01
O+	4.1022E-02	1.1444E-01	1.4689E-01
O++	2.0180E-07	2.3420E-04	1.4298E-03
O-	5.0597E-02	6.1119E-02	2.8532E-02
O2	1.5927E-03	6.4708E-04	2.4573E-04
O2+	4.8852E-04	8.2498E-04	1.1856E-04
O2++	4.7417E-05	6.2783E-05	2.0223E-05
C	2.5703E-01	7.3217E-01	2.0707E-01
C+	4.3230E-02	4.6593E-02	5.5945E-02
C++	5.2407E-04	3.5862E-04	1.2101E-03
C-	1.7595E-02	1.0987E-02	6.7987E-04
CO	5.1353E-02	8.8946E-04	3.0261E-04
CO+	5.8971E-04	3.8981E-04	1.8586E-04
CO2	1.9703E-06	1.5267E-07	2.7869E-08
C2	5.4586E-04	7.9938E-05	1.8426E-05

P1 = 2.00E+05 N/SC-M, US1 = 1.45E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3901E+03	3.1565E+04	4.7883E+04
T	8.6810E+01	1.5004E+02	1.9787E+02
RHO	1.1642E+01	5.3279E+01	6.1367E+01
M	-1.0969E+01	-2.0560E+01	-2.5752E+01
A	1.6583E+01	2.4624E+01	2.8376E+01
S	3.0191E+00	3.2058E+00	3.3213E+00
Z	3.3545E+00	3.7257E+00	3.9855E+00
GAME	9.4438E-01	1.0242E+00	1.0320E+00
U	4.9945E+01	1.0726E+01	1.1467E+01

SPECIES	MOLE FRACTIONS		
E-	1.1088E-01	1.9628E-01	2.4805E-01
O	5.2084E-01	3.8793E-01	3.2195E-01
O+	4.4115E-02	1.4160E-01	1.7233E-01
O++	1.5744E-06	8.7896E-04	3.9457E-03
O-	4.8823E-02	4.1284E-02	2.5042E-02
O2	1.0150E-03	2.9258E-04	1.0594E-04
O2+	5.0959E-04	5.5822E-04	3.1716E-04
O2++	3.1126E-05	2.3166E-05	8.2368E-06
C	2.4144E-01	2.1089E-01	1.8262E-01
C+	5.1575E-02	5.112E-02	6.4584E-02
C++	1.9695E-05	9.5324E-04	2.8946E-03
C-	1.1748E-02	7.2746E-04	4.5332E-04
CO	2.5347E-03	3.7074E-04	1.2954E-04
CO+	7.2207E-04	2.1924E-04	1.0136E-04
CO2	5.9423E-07	3.6214E-08	7.1955E-09
C2	2.4009E-04	2.7357E-05	7.6626E-06

P1 = 2.00E+05 N/SC-M, US1 = 1.40E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1519E+03	2.9736E+04	4.4668E+04
T	8.2229E+01	1.4920E+02	1.8397E+02
RHO	1.1687E+01	5.4845E+01	6.2652E+01
M	-1.0158E+01	-1.9130E+01	-2.3857E+01
A	1.5978E+01	2.3469E+01	2.7130E+01
S	2.9700E+00	3.1744E+00	3.2715E+00
Z	3.2901E+00	3.6330E+00	3.8755E+00
GAME	9.4768E-01	1.0159E+00	1.0323E+00
U	4.7376E+01	1.0107E+01	1.0835E+01

SPECIES	MOLE FRACTIONS		
E-	9.4929E-02	1.7661E-01	2.2694E-01
O	5.4260E-01	4.1327E-01	3.4855E-01
O+	5.2152E-02	1.2843E-01	1.6046E-01
O++	6.0107E-07	4.7389E-04	2.5015E-03
O-	5.0215E-03	5.0286E-02	3.0795E-02
O2	1.2745E-03	4.3825E-04	1.5825E-04
O2+	5.0502E-04	6.8162E-04	4.0400E-04
O2++	3.7050E-05	3.4057E-05	1.2628E-05
C	2.4964E-01	2.2163E-01	1.9448E-01
C+	4.7655E-02	5.1012E-02	6.0407E-02
C++	1.0602E-05	6.0993E-04	2.0203E-02
C-	1.2747E-02	8.9309E-04	5.4890E-04
CO	5.4737E-03	5.4737E-04	1.9374E-04
CO+	8.4814E-04	2.9106E-04	1.3558E-04
CO2	1.0452E-04	7.7570E-08	1.3588E-08
C2	3.6749E-04	3.6807E-05	1.1556E-05

P1 = 2.00E+05 N/SC-M, US1 = 1.50E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6262E+03	3.3414E+04	5.1140E+04
T	9.2442E+01	1.4884E+02	2.0749E+02
RHO	1.1586E+01	5.1895E+01	6.0117E+01
M	-1.1807E+01	-2.2078E+01	-2.7708E+01
A	1.7217E+01	2.5750E+01	2.9619E+01
S	3.0674E+00	3.2521E+00	3.3709E+00
Z	3.4215E+00	3.8123E+00	4.0999E+00
GAME	9.4708E-01	1.0285E+00	1.0313E+00
U	5.0713E+01	1.1344E+01	1.2079E+01

SPECIES	MOLE FRACTIONS		
E-	1.2734E-01	2.1552E-01	2.6887E-01
O	4.9750E-01	3.4322E-01	2.9566E-01
O+	7.6827E-02	1.5387E-01	1.8316E-01
O++	3.7849E-06	1.5050E-03	5.8277E-03
O-	4.6544E-03	3.3972E-03	2.0474E-02

TABLE I.- Continued

$$p_1 = 200 \text{ kN/m}^2$$

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 1.55E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.8697E+03	3.5227E+04	5.4377E+04
T	0.6242E+01	1.7857E+02	2.1872E+02
PHO	1.1511E+01	5.0412E+01	5.8993E+01
H	-1.2674E+01	-2.3561E+01	-2.9725E+01
A	1.7884E+01	2.6829E+01	3.0831E+01
S	3.1160E+00	3.2577E+00	3.4188E+00
Z	3.4931E+00	3.9143E+00	4.2143E+00
GAME	9.5162E-01	1.0298E+00	1.0312E+00
U	5.2377E+01	1.1568E+01	1.2686E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.4473E-01	2.3451E-01	2.8862E-01
O	4.7757E-01	3.2912E-01	2.7163E-01
O+	9.0215E-02	1.6529E-01	1.9257E-01
O++	8.5330E-05	2.4078E-03	8.0640E-03
O-	4.2528E-03	2.8031E-03	1.6925E-03
O2	6.3080E-04	1.3750E-04	5.0087E-05
O2+	4.8447E-04	3.4853E-04	1.9491E-04
O2-	2.0511E-05	9.7734E-06	3.7177E-06
C	2.2480E-01	1.8938E-01	1.6023E-01
C+	5.8715E-02	6.2096E-02	7.1321E-02
C++	5.9031E-05	2.6542E-03	5.1845E-03
C-	0.5722E-04	5.0102E-04	3.2038E-04
CO	1.2857E-02	1.6972E-04	6.2546E-05
CO+	5.0707E-04	1.2905E-04	5.8530E-05
CO2	1.8624E-07	1.0233E-08	2.2945E-09
C2	1.1594E-04	1.0799E-05	3.6932E-06

 $P_1 = 2.00E+05 \text{ N/SQ-M}, \quad U_1 = 1.60E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1206E+03	3.7040E+04	5.7628E+04
T	1.0108E+02	1.8814E+02	2.2967E+02
PHO	1.1430E+01	5.9095E+01	5.7946E+01
H	-1.3569E+01	-2.5127E+01	-3.1790E+01
A	1.8581E+01	2.7874E+01	3.2038E+01
S	3.1628E+00	3.2423E+00	3.4656E+00
Z	3.5664E+00	4.0122E+00	4.2302E+00
GAME	9.5773E-01	1.0292E+00	1.0321E+00
U	5.4026E+01	1.2607E+01	1.3255E+01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6137E-01	2.5301E-01	3.0757E-01
O	4.4973E-01	3.1582E-01	2.4862E-01
O+	1.0377E-01	1.7569E-01	2.0073E-01
O++	1.7925E-05	3.6168E-03	1.0647E-02
O-	4.0044E-03	2.3277E-03	1.4103E-03
O2	4.8914E-04	9.6244E-05	3.5417E-05
O2+	4.5846E-04	2.9827E-04	1.5346E-04
O2-	1.6217E-05	6.6453E-06	2.5740E-06
C	2.1652E-01	1.7889E-01	1.4999E-01
C+	6.1309E-02	6.6752E-02	7.3922E-02
C++	9.6321E-05	2.8430E-03	6.5586E-03
C-	8.4273E-04	4.2080E-04	2.7407E-04
CO	9.2022E-04	1.1863E-04	4.5015E-05
CO+	4.2109E-04	9.9172E-05	4.5303E-05
CO2	1.0631E-07	5.7697E-09	1.3755E-09
C2	7.9443E-05	7.1265E-06	2.6760E-06

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 1.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5750E+01	6.7533E+01	1.1241E+02
T	2.5812E+00	3.4570E+00	4.0727E+01
RHO	6.1029E+00	1.9532E+01	2.7599E+01
H	9.4419E-01	9.0798E-01	8.8129E-01
A	1.5478E+00	1.7797E+00	1.9265E+00
S	1.0939E+00	1.1104E+00	1.1346E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.2819E-01	9.1622E-01	9.1127E-01
U	3.0950E+00	9.6609E-01	8.7897E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	3.0416E-54	9.0741E-45	3.1830E-36
O	1.0300E-15	6.5851E-13	3.8218E-11
O+	6.3547E-39	4.2318E-35	2.9712E-32
O++	0.	0.	0.
O-	2.9579E-59	8.9928E-49	1.8325E-39
O2	4.3992E-04	4.3992E-04	4.3995E-04
O2+	1.7597E-18	1.7597E-18	1.7597E-18
O2-	3.0356E-51	4.9637E-42	3.6793E-34
C	1.4902E-55	1.3109E-46	1.3203E-38
C+	8.2340E-66	1.8701E-57	5.0487E-50
C++	0.	0.	0.
C-	0.	1.9434E-83	1.3068E-67
CO	7.2263E-13	4.9567E-10	6.5239E-08
CO+	1.0541E-37	2.3096E-33	5.0626E-30
CO2	9.9956E-01	9.9956E-01	9.9956E-01
C2	9.1543E-80	7.9555E-67	6.2964E-55

P1 = 5.00E+05 N/SQ-M, US1= 1.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1278E+01	1.9410E+02	2.9203E+02
T	3.8893E+00	5.6969E+00	6.6151E+00
RHO	8.0418E+00	3.4071E+01	4.4122E+01
H	8.8932E-01	8.0791E-01	7.6469E-01
A	1.8839E+00	2.2691E+00	2.4401E+00
S	1.1747E+00	1.2084E+00	1.2363E+00
Z	1.0000E+00	1.0001E+00	1.0005E+00
GAME	9.1255E-01	9.0376E-01	8.9962E-01
U	4.5382E+00	1.0736E+00	1.0101E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.8176E-37	2.3492E-22	1.8972E-18
O	2.2644E-11	3.4854E-08	4.9146E-07
O+	9.5747E-33	1.3176E-27	6.9578E-25
O++	0.	0.	5.2568E-94
O-	7.1494E-41	2.5945E-24	5.0240E-20
O2	4.3993E-04	4.9483E-04	9.4094E-04
O2+	1.7597E-18	1.7581E-18	1.7434E-17
O2-	1.1704E-35	1.2714E-21	1.3728E-17
C	1.3657E-39	3.1402E-26	1.2606E-21
C+	6.1360E-51	2.5695E-39	3.1467E-33
C++	0.	8.9958E-88	2.6917E-77
C-	1.5181E-69	2.3497E-41	7.4662E-35
CO	3.4152E-08	1.0991E-04	1.0030E-03
CO+	1.2915E-30	1.1233E-24	5.1663E-22
CO2	9.9956E-01	9.9940E-01	9.9806E-01
C2	2.1917E-56	1.0325E-35	4.6232E-30

P1 = 5.00E+05 N/SQ-M, US1= 1.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.2846E+01	1.2169E+02	1.9028E+02
T	3.1957E+00	4.5033E+00	5.2629E+00
RHO	7.1505E+00	2.7026E+01	3.6152E+01
H	9.1903E-01	8.6219E-01	8.2785E-01
A	1.7137E+00	2.0230E+00	2.1830E+00
S	1.1341E+00	1.1597E+00	1.1860E+00
Z	1.0000E+00	1.0000E+00	1.0000E+00
GAME	9.1904E-01	9.0878E-01	9.0547E-01
U	3.8201E+00	1.0101E+00	9.3968E-01

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.4645E-44	8.3142E-29	4.0509E-25
O	9.5342E-14	2.6665E-10	8.0871E-09
O+	2.1850E-35	1.0856E-30	1.5808E-28
O++	0.	0.	0.
O-	1.5722E-48	1.8033E-31	1.9169E-27
O2	4.3992E-04	4.4015E-04	4.5196E-04
O2+	1.7597E-18	1.7597E-18	1.7596E-18
O2-	4.0045E-42	1.5516E-27	5.2803E-24
C	3.2965E-46	1.0370E-31	2.7143E-28
C+	4.3160E-57	1.2076E-43	1.8415E-40
C++	0.	0.	1.2391E-93
C-	1.5682E-82	9.2464E-54	3.0282E-47
CO	1.6645E-10	4.6871E-07	2.4111E-05
CO+	1.4462E-33	9.3858E-28	1.0811E-25
CO2	9.9956E-01	9.9956E-01	9.9952E-01
C2	3.5775E-66	1.4083E-44	1.1619E-39

P1 = 5.00E+05 N/SQ-M, US1= 1.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1024E+01	2.8561E+02	4.1732E+02
T	4.6621E+00	7.0166E+00	8.0472E+00
RHO	8.7999E+00	4.0663E+01	5.1659E+01
H	8.5508E-01	7.4511E-01	6.9235E-01
A	2.0574E+00	2.5105E+00	2.6836E+00
S	1.2146E+00	1.2555E+00	1.2843E+00
Z	1.0000E+00	1.0011E+00	1.0039E+00
GAME	9.0759E-01	8.9733E-01	8.9146E-01
U	5.2490E+00	1.1372E+00	1.0770E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.1202E-27	1.4954E-17	1.5609E-15
O	1.2301E-09	1.4659E-06	1.3437E-05
O+	1.5716E-30	7.5855E-24	1.3862E-20
O++	0.	2.8134E-89	9.3015E-80
O-	3.2455E-30	4.8913E-19	1.8273E-16
O2	4.4129E-04	1.4885E-03	4.2896E-03
O2+	1.7597E-18	1.2154E-16	1.8066E-14
O2-	1.0178E-26	1.0435E-16	1.6326E-14
C	2.1014E-30	1.4436E-20	1.5045E-17
C+	1.9997E-42	3.3965E-34	1.8770E-27
C++	6.1694E-98	2.1191E-73	2.3668E-65
C-	1.9889E-51	3.4677E-34	7.2001E-29
CO	2.7540E-06	2.0995E-03	7.7161E-03
CO+	8.4306E-28	5.4940E-21	4.8626E-18
CO2	9.9956E-01	9.9641E-01	9.8798E-01
C2	9.0158E-43	2.7751E-29	1.3405E-24

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 1.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.2094E+01	3.9687E+02	5.6578E+02
T	5.5148E+00	8.3867E+00	9.4564E+00
RHO	9.4453E+00	4.7049E+01	5.9004E+01
H	8.1627E-01	6.7370E-01	6.1113E-01
A	2.2331E+00	2.7385E+00	2.9115E+00
S	1.2534E+00	1.3009E+00	1.3308E+00
Z	1.0001E+00	1.0058E+00	1.0140E+00
GAME	9.0421E-01	8.8907E-01	8.8402E-01
U	5.5563E+00	1.1975E+00	1.1340E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	5.1942E-23	6.5343E-15	1.8727E-13
O	3.8836E-08	2.7690E-05	1.4031E-04
O+	1.1072E-27	1.1925E-19	2.4741E-17
O++	0.	1.5847E-75	5.3081E-67
O-	1.6694E-25	1.0255E-15	7.3134E-14
O2	4.9672E-04	6.1557E-03	1.4087E-02
O2+	1.7598E-18	7.7084E-14	3.1368E-12
O2-	1.5281E-22	6.9555E-14	2.8803E-12
C	2.2175E-26	1.0725E-16	1.3363E-14
C+	1.1032E-38	3.6902E-26	5.4980E-23
C++	1.2423E-90	4.9940E-62	5.9616E-55
C-	3.7116E-44	1.5832E-27	3.1078E-24
CO	1.1370E-04	1.1464E-02	2.7446E-02
CO+	8.2309E-25	3.2168E-17	3.8811E-15
CO2	9.9939E-01	9.8235E-01	9.5833E-01
C2	2.9887E-37	1.9751E-23	1.6874E-20

P1 = 5.00E+05 N/SQ-M, US1= 2.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.4490E+01	5.2959E+02	7.3847E+02
T	6.4352E+00	9.7161E+00	1.0780E+01
RHO	1.0015E+01	5.3565E+01	6.6324E+01
H	7.7290E-01	5.9360E-01	5.2104E-01
A	2.4062E+00	2.9540E+00	3.1315E+00
S	1.2909E+00	1.3452E+00	1.3762E+00
Z	1.0006E+00	1.0176E+00	1.0329E+00
GAME	8.9913E-01	8.8260E-01	8.8072E-01
U	6.6612E+00	1.2475E+00	1.1837E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.7854E-18	4.2249E-13	5.0775E-12
O	7.0249E-07	2.1577E-04	6.9813E-04
O+	1.9692E-25	7.4568E-17	3.9736E-15
O++	1.4062E-97	7.6528E-65	1.4561E-58
O-	1.7744E-20	1.8472E-13	4.3424E-12
O2	1.0623E-03	1.7507E-02	3.1592E-02
O2+	7.6532E-18	6.9236E-12	1.0926E-10
O2-	4.0916E-18	6.3267E-12	1.0021E-10
C	3.9352E-22	3.7105E-14	1.3208E-12
C+	2.5277E-34	2.0957E-22	1.7805E-20
C++	2.9322E-80	1.7547E-53	3.5216E-21
C-	3.4069E-36	1.2090E-23	1.0021E-21
CO	1.2461E-03	3.4365E-02	6.3030E-02
CO+	1.2873E-22	1.0312E-14	3.6397E-13
CO2	9.9769E-01	9.4791E-01	9.0468E-01
C2	2.7399E-31	5.8649E-20	9.0347E-18

P1 = 5.00E+05 N/SQ-M, US1= 2.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.8275E+01	6.8772E+02	9.4093E+02
T	7.3882E+00	1.0977E+01	1.2044E+01
RHO	1.0564E+01	6.0360E+01	7.3659E+01
H	7.2492E-01	5.0442E-01	4.2130E-01
A	2.5711E+00	3.1669E+00	3.3555E+00
S	1.3271E+00	1.3890E+00	1.4214E+00
Z	1.0030E+00	1.0380E+00	1.0607E+00
GAME	8.9210E-01	8.8024E-01	8.8137E-01
U	7.3704E+00	1.2922E+00	1.2332E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	3.3794E-16	8.4906E-12	5.9996E-11
O	8.7681E-06	9.1770E-04	2.2328E-03
O+	2.6974E-22	7.4947E-15	1.7852E-13
O++	1.0922E-83	4.2515E-56	1.8886E-51
O-	1.0060E-17	7.5848E-12	9.0362E-11
O2	3.3746E-03	3.6090E-02	5.5380E-02
O2+	1.3186E-15	1.7544E-10	1.5240E-09
O2-	9.6892E-16	1.6002E-10	1.3847E-09
C	4.9574E-19	2.4154E-12	4.0885E-11
C+	7.5714E-30	8.3146E-20	8.1196E-18
C++	1.1657E-68	3.7328E-46	2.1472E-42
C-	2.8638E-31	5.5109E-21	6.6929E-19
CO	5.8807E-03	7.2249E-02	1.1216E-01
CO+	1.1835E-19	6.4355E-13	1.0814E-11
CO2	9.9074E-01	8.9074E-01	8.3022E-01
C2	7.7337E-28	1.6490E-17	1.0056E-15

P1 = 5.00E+05 N/SQ-M, US1= 2.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3450E+01	8.7472E+02	1.1791E+03
T	8.3234E+00	1.2187E+01	1.3288E+01
RHO	1.1130E+01	6.7298E+01	8.0936E+01
H	6.7234E-01	4.0625E-01	3.1153E-01
A	2.7253E+00	3.3847E+00	3.5904E+00
S	1.3623E+00	1.4325E+00	1.4665E+00
Z	1.0088E+00	1.0665E+00	1.0964E+00
GAME	8.8456E-01	8.8142E-01	8.8486E-01
U	8.0829E+00	1.3391E+00	1.2882E+00

SPECIES	-----	MOLE FRACTIONS	-----
E-	1.8568E-14	8.6378E-11	4.2997E-10
O	6.2933E-05	2.6691E-03	5.4402E-03
O+	1.3835E-19	3.0358E-13	3.7893E-12
O++	1.1711E-73	4.8958E-52	1.9827E-46
O-	1.5168E-15	1.3457E-10	9.9623E-10
O2	9.1094E-03	6.0064E-02	8.2855E-02
O2+	9.1767E-14	2.0790E-09	1.2087E-08
O2-	7.1712E-14	1.8748E-09	1.0826E-08
C	1.4897E-16	6.5083E-11	6.3568E-10
C+	2.1395E-26	1.9241E-17	5.5732E-16
C++	1.9938E-60	1.3166E-42	2.6089E-38
C-	1.2778E-27	1.6579E-18	5.2789E-17
CO	1.7410E-02	1.2197E-01	1.7035E-01
CO+	3.0697E-17	1.6437E-11	1.6091E-10
CO2	9.7342E-01	8.1530E-01	7.4136E-01
C2	1.9765E-24	1.9904E-15	4.7127E-14

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 2.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1004E+02	1.0943E+03	1.4591E+03
T	9.2051E+00	1.3381E+01	1.4554E+01
RHO	1.1725E+01	7.4200E+01	8.8012E+01
H	6.1514E-01	2.9896E-01	1.9116E-01
A	2.8720E+00	3.6130E+00	3.8421E+00
S	1.3970E+00	1.4759E+00	1.5118E+00
Z	1.0195E+00	1.1021E+00	1.1391E+00
GAME	8.7889E-01	8.8511E-01	8.9040E-01
U	8.8002E+00	1.3930E+00	1.3523E+00

P1 = 5.00E+C5 N/SQ-M, US1= 2.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2804E+02	1.3474E+03	1.7836E+03
T	1.0026E+01	1.4589E+01	1.5875E+01
RHO	1.2333E+01	8.0730E+01	9.4570E+01
H	5.5334E-01	1.8265E-01	5.9918E-02
A	3.0156E+00	3.8554E+00	4.1144E+00
S	1.4315E+00	1.5193E+00	1.5571E+00
Z	1.0354E+00	1.1440E+00	1.1881E+00
GAME	8.7595E-01	8.9061E-01	8.9759E-01
U	9.5206E+00	1.4570E+00	1.4277E+00

SPECIES	MOLE FRACTIONS		
E-	4.0589E-13	5.4237E-10	2.2553E-09
O	2.7673E-04	6.1074E-03	1.1141E-02
O+	2.3146E-17	5.1887E-12	4.9554E-11
O++	1.0575E-68	2.7078E-47	8.5240E-44
O-	7.6387E-14	1.2580E-09	7.3006E-09
O2	1.9307E-02	8.6949E-02	1.1137E-01
O2+	2.4664E-12	1.4362E-08	8.6465E-08
O2-	1.9866E-12	1.2770E-08	5.8491E-08
C	1.3412E-14	8.3692E-10	6.3759E-09
C+	3.3256E-23	9.4443E-16	2.1490E-14
C++	3.3791E-56	9.9872E-39	1.0310E-35
C-	1.5588E-24	9.1550E-17	2.2884E-15
CO	3.8027E-02	1.7925E-01	2.3311E-01
CO+	2.4532E-15	2.0345E-10	1.5322E-09
CO2	9.4239E-01	7.2768E-01	6.4438E-01
C2	6.5590E-21	6.9943E-14	1.2488E-12

SPECIES	MOLE FRACTIONS		
E-	4.0044E-12	2.5582E-09	9.5078E-09
O	8.4661E-04	1.1948E-02	2.0269E-02
O+	7.6587E-16	5.6188E-11	4.4034E-10
O++	2.2168E-63	2.7001E-43	5.6082E-40
O-	1.2882E-12	8.0815E-09	3.9705E-08
O2	3.3805E-02	1.1431E-01	1.3839E-01
O2+	2.8167E-11	7.0982E-08	2.8117E-07
O2-	2.2931E-11	6.2065E-08	2.4284E-07
C	3.1845E-13	7.1608E-09	4.5817E-08
C+	3.6677E-21	2.5353E-14	4.4743E-13
C++	3.5853E-52	1.9194E-35	1.2334E-32
C-	2.0377E-22	2.6942E-15	5.1516E-14
CO	6.7606E-02	2.3980E-01	2.9631E-01
CO+	5.5239E-14	1.6660E-09	1.0450E-08
CO2	8.9774E-01	6.3394E-01	5.4504E-01
C2	4.9540E-19	1.4027E-12	1.9689E-11

P1 = 5.00E+C5 N/SQ-M, US1= 3.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4743E+02	1.6321E+03	2.1524E+03
T	1.0798E+01	1.5836E+01	1.7284E+01
RHO	1.2925E+01	8.6529E+01	1.0023E+02
H	4.8655E-01	5.7525E-02	-8.2656E-02
A	3.1597E+00	4.1145E+00	4.4114E+00
S	1.4660E+00	1.5624E+00	1.6024E+00
Z	1.0563E+00	1.1911E+00	1.2424E+00
GAME	8.7532E-01	8.9751E-01	9.0621E-01
U	1.0242E+01	1.5324E+00	1.5196E+00

P1 = 5.00E+05 N/SQ-M, US1= 3.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6817E+02	1.9457E+03	2.5621E+03
T	1.1536E+01	1.7146E+01	1.8804E+01
RHO	1.3479E+01	9.1327E+01	1.0473E+02
H	4.1598E-01	-7.6245E-02	-2.3589E-01
A	3.3068E+00	4.3925E+00	4.7339E+00
S	1.5007E+00	1.6053E+00	1.6474E+00
Z	1.0815E+00	1.2425E+00	1.3010E+00
GAME	8.7640E-01	9.0561E-01	9.1604E-01
U	1.0962E+01	1.6205E+00	1.6191E+00

SPECIES	MOLE FRACTIONS		
E-	2.5285E-11	9.9204E-09	3.4858E-08
O	2.0322E-03	2.0965E-02	3.3898E-02
O+	1.3311E-14	4.3971E-10	3.0739E-09
O++	1.7578E-58	7.4948E-40	1.4805E-36
O-	1.2484E-11	3.9812E-08	1.7684E-07
O2	5.1643E-02	1.3984E-01	1.6157E-01
O2+	1.9819E-10	2.7606E-07	9.8793E-07
O2-	1.6112E-10	2.3694E-07	8.3652E-07
C	4.1519E-12	4.5916E-08	2.6712E-07
C+	1.8482E-19	4.4113E-13	6.8025E-12
C++	8.6714E-48	1.3311E-32	7.2502E-30
C-	1.1773E-20	5.0381E-14	8.3373E-13
CO	1.0449E-01	2.9990E-01	3.5634E-01
CO+	6.8698E-13	1.0168E-08	5.7212E-08
CO2	8.4184E-01	5.3929E-01	4.4818E-01
C2	1.7498E-17	1.8813E-11	2.3132E-10

SPECIES	MOLE FRACTIONS		
E-	1.1475E-10	3.3542E-08	1.1501E-07
O	4.1250E-03	3.3977E-02	5.2998E-02
O+	1.3513E-13	2.7182E-09	1.7708E-08
O++	1.1940E-54	8.1843E-37	1.8246E-33
O-	7.8978E-11	1.6157E-07	6.7173E-07
O2	7.1663E-02	1.6157E-01	1.7870E-01
O2+	9.7124E-10	8.9763E-07	2.9806E-06
O2-	7.8297E-10	7.5531E-07	2.4747E-06
C	3.3559E-11	2.3978E-07	1.3233E-06
C+	4.2477E-18	5.6253E-12	8.0903E-11
C++	1.2002E-45	4.4349E-30	2.4116E-27
C-	2.9828E-19	6.8024E-13	1.0428E-11
CO	1.6664E-01	3.5642E-01	4.0973E-01
CO+	5.3208E-12	5.0073E-08	2.6304E-07
CO2	7.7757E-01	4.4803E-01	3.5856E-01
C2	3.0810E-16	1.8879E-10	2.1606E-09

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 3.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9026E+02	2.2838E+03	3.0104E+03
T	1.2255E+01	1.8540E+01	2.0468E+01
RHO	1.3976E+01	9.4939E+01	1.0790E+02
H	3.4044E-01	-2.1847E-01	-4.0052E-01
A	3.4586E+00	4.6908E+00	5.0853E+00
S	1.5355E+00	1.6476E+00	1.6920E+00
Z	1.1108E+00	1.2975E+00	1.3631E+00
GAME	8.7872E-01	9.1471E-01	9.2687E-01
U	1.1680E+01	1.7222E+00	1.7339E+00

SPECIES	MOLE FRACTIONS		
E-	4.2294E-10	1.0278E-07	3.5197E-07
O	7.4482E-03	5.1775E-02	7.8497E-02
O+	1.0208E-12	1.4088E-08	8.7707E-08
O++	3.4825E-51	6.5824E-34	1.1782E-30
O-	3.8417E-10	5.6579E-07	2.2531E-06
O2	9.2688E-02	1.7785E-01	1.8821E-01
O2+	3.7603E-09	2.5342E-06	7.9346E-06
O2-	2.9856E-09	2.0895E-06	6.4739E-06
C	2.0574E-10	1.0771E-06	5.8328E-06
C+	7.0591E-17	5.7571E-11	7.9728E-10
C++	7.7917E-42	1.0443E-27	4.9959E-25
C-	5.3998E-18	7.2894E-12	1.0718E-10
CO	1.9203E-01	4.0680E-01	4.5428E-01
CO+	3.1407E-11	2.0971E-07	1.0559E-06
CO2	7.0783E-01	3.6358E-01	2.7899E-01
C2	3.8844E-15	1.5362E-09	1.6974E-08

P1 = 5.00E+05 N/SQ-M, US1= 3.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1367E+02	2.6421E+03	3.4961E+03
T	1.2966E+01	2.0037E+01	2.2312E+01
RHO	1.4409E+01	9.7307E+01	1.0971E+02
H	2.6034E-01	-3.6900E-01	-5.7772E-01
A	3.6166E+00	5.0106E+00	5.4684E+00
S	1.5706E+00	1.6894E+00	1.7361E+00
Z	1.1437E+00	1.3552E+00	1.4282E+00
GAME	8.8201E-01	9.2464E-01	9.3840E-01
U	1.2396E+01	1.8384E+00	1.8740E+00

SPECIES	MOLE FRACTIONS		
E-	1.3130E-09	2.9139E-07	1.0186E-06
O	1.2347E-02	7.4979E-02	1.1097E-01
O+	5.7073E-12	6.2851E-08	3.8211E-07
O++	3.5289E-48	2.6304E-31	4.3519E-28
O-	1.4878E-09	1.7531E-06	6.8206E-06
O2	1.1367E-01	1.8741E-01	1.8914E-01
O2+	1.2016E-08	6.3458E-06	1.8915E-05
O2-	9.3642E-09	5.1325E-06	1.5255E-05
C	9.7264E-10	4.2975E-06	2.3303E-05
C+	7.2426E-16	4.8590E-10	6.7308E-09
C++	2.2446E-40	1.4696E-25	6.8332E-23
C-	5.8723E-17	6.3860E-11	9.4159E-10
CO	2.3895E-01	4.4916E-01	4.8865E-01
CO+	1.4305E-10	7.6789E-07	3.7908E-06
CO2	6.3507E-01	2.8843E-01	2.1118E-01
C2	3.2538E-14	1.0474E-08	1.1618E-07

P1 = 5.00E+05 N/SQ-M, US1= 3.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3839E+02	3.0154E+03	4.0118E+03
T	1.3681E+01	2.1652E+01	2.4344E+01
RHO	1.4768E+01	9.8441E+01	1.1024E+02
H	1.7568E-01	-5.2766E-01	-7.6648E-01
A	3.7820E+00	5.3520E+00	5.8792E+00
S	1.6058E+00	1.7303E+00	1.7794E+00
Z	1.1798E+00	1.4147E+00	1.4949E+00
GAME	8.8609E-01	9.3510E-01	9.4984E-01
U	1.3109E+01	1.9695E+00	2.0272E+00

SPECIES	MOLE FRACTIONS		
E-	3.6699E-09	7.7534E-07	2.7893E-06
O	1.9207E-02	1.0383E-01	1.4967E-01
O+	2.7643E-11	2.4614E-07	1.4582E-06
O++	8.7246E-46	6.0038E-29	1.0033E-25
O-	5.0212E-09	4.8916E-06	1.8671E-05
O2	1.3359E-01	1.8960E-01	1.8157E-01
O2+	3.3800E-08	1.4274E-05	4.0250E-05
O2-	2.5701E-08	1.1364E-05	3.2455E-05
C	4.0099E-09	1.5443E-05	8.4792E-05
C+	6.5815E-15	3.4867E-09	4.8711E-08
C++	2.2148E-37	1.3560E-23	6.4836E-21
C-	5.6141E-16	4.7342E-10	7.1195E-09
CO	2.8565E-01	4.8243E-01	5.1220E-01
CO+	5.6450E-10	2.5073E-06	1.2166E-05
CO2	5.6155E-01	2.2409E-01	1.5634E-01
C2	2.3470E-13	6.1726E-08	6.9977E-07

P1 = 5.00E+05 N/SQ-M, US1= 4.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.6440E+02	3.3985E+03	4.5537E+03
T	1.4410E+01	2.3397E+01	2.6582E+01
RHO	1.5052E+01	9.8446E+01	1.0968E+02
H	8.6470E-02	-6.9430E-01	-9.6731E-01
A	3.9558E+00	5.7136E+00	6.3131E+00
S	1.6411E+00	1.7704E+00	1.8217E+00
Z	1.2190E+00	1.4754E+00	1.5619E+00
GAME	8.9086E-01	9.4565E-01	9.5994E-01
U	1.3817E+01	2.1158E+00	2.1971E+00

SPECIES	MOLE FRACTIONS		
E-	9.3812E-09	1.9541E-06	7.2795E-06
O	2.8441E-02	1.3795E-01	1.9300E-01
O+	1.1495E-10	8.5557E-07	4.8859E-06
O++	2.1483E-43	9.3481E-27	1.6481E-23
O-	1.4989E-08	1.2434E-05	4.6646E-05
O2	1.5156E-01	1.8452E-01	1.6686E-01
O2+	8.5390E-08	2.9034E-05	7.6578E-05
O2-	6.3083E-08	2.2910E-05	6.2892E-05
C	1.4496E-08	5.0831E-05	2.8339E-04
C+	4.7630E-14	2.1736E-08	3.0519E-07
C++	2.0845E-35	9.1822E-22	4.6157E-19
C-	4.2124E-15	3.0496E-09	4.7212E-08
CO	3.3084E-01	5.0640E-01	5.2586E-01
CO+	1.4488E-09	7.3892E-06	3.5096E-05
CO2	4.8916E-01	1.7100E-01	1.1376E-01
C2	1.3865E-12	3.2006E-07	3.7542E-06

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 4.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9168E+02	3.7864E+03	5.1156E+03
T	1.5160E+01	2.5281E+01	2.9023E+01
RHO	1.5260E+01	9.7479E+01	1.0829E+02
H	-7.2883E-03	-8.6876E-01	-1.1801E+00
A	4.1390E+00	6.0925E+00	6.7571E+00
S	1.6765E+00	1.8093E+00	1.8628E+00
Z	1.2608E+00	1.5365E+00	1.6277E+00
GAME	8.9628E-01	9.5559E-01	9.6649E-01
U	1.4522E+01	2.2767E+00	2.3810E+00

SPECIES	MOLE FRACTIONS		
E-	2.2416E-08	4.6903E-06	1.8068E-05
O	4.0488E-02	1.7622E-01	2.3812E-01
O+	4.2677E-10	2.6482E-06	1.4261E-05
O++	2.6225E-41	9.9666E-25	1.5247E-21
O-	4.0681E-08	2.9020E-05	1.0665E-04
O2	1.6672E-01	1.7310E-01	1.4744E-01
O2+	1.9816E-07	5.3570E-05	1.3018E-04
O2-	1.4157E-07	4.2382E-05	1.1166E-04
C	4.7423E-08	1.5436E-04	8.6553E-04
C+	2.9529E-13	1.1845E-07	1.6259E-06
C++	1.2088E-33	4.5868E-20	2.1341E-17
C-	2.6778E-14	1.7282E-08	2.7253E-07
CO	3.7323E-01	5.2174E-01	5.3116E-01
CO+	6.0783E-09	1.9772E-05	9.0583E-05
CO2	4.1956E-01	1.2863E-01	8.1925E-02
C2	7.1044E-12	1.4997E-06	1.7800E-05

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 4.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.4999E+02	4.5579E+03	6.2675E+03
T	1.6759E+01	2.9459E+01	3.4313E+01
RHO	1.5452E+01	9.3467E+01	1.0453E+02
H	-2.0842E-01	-1.2406E+00	-1.6379E+00
A	4.5373E+00	6.8719E+00	7.5806E+00
S	1.7470E+00	1.8839E+00	1.9409E+00
Z	1.3515E+00	1.6553E+00	1.7474E+00
GAME	9.0892E-01	9.6839E-01	9.5840E-01
U	1.5919E+01	2.6355E+00	2.7616E+00

SPECIES	MOLE FRACTIONS		
E-	1.1122E-07	2.3624E-05	9.1135E-05
O	7.4729E-02	2.5759E-01	3.1999E-01
O+	4.6726E-09	1.7987E-05	7.8042E-05
O++	4.0856E-37	3.3881E-21	2.7653E-18
O-	2.4246E-07	1.2557E-04	4.2196E-04
O2	1.8569E-01	1.3817E-01	1.0711E-01
O2+	8.7744E-07	1.3759E-04	2.7322E-04
O2-	5.7621E-07	1.1542E-04	2.7493E-04
C	4.1767E-07	1.1327E-03	5.7872E-03
C+	8.6639E-12	2.3606E-06	2.6229E-05
C++	3.2385E-30	4.4404E-17	1.2761E-14
C-	8.0128E-13	3.8927E-07	5.5394E-06
CO	4.4545E-01	5.3158E-01	5.2223E-01
CO+	4.7770E-08	1.0707E-04	4.1608E-04
CO2	2.9413E-01	7.0977E-02	4.3052E-02
C2	1.4269E-10	2.3889E-05	2.5349E-04

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 4.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	-3.2021E+02	4.1741E+03	5.6898E+03
T	1.5941E+01	2.7303E+01	3.1631E+01
RHO	1.5392E+01	9.5737E+01	1.0643E+02
H	-1.0559E-01	-1.0509E+00	-1.4040E+00
A	4.3326E+00	6.4823E+00	7.1882E+00
S	1.7118E+00	1.8472E+00	1.9026E+00
Z	1.3051E+00	1.5969E+00	1.6901E+00
GAME	9.0231E-01	9.6377E-01	9.6648E-01
U	1.5223E+01	2.4510E+00	2.5723E+00

SPECIES	MOLE FRACTIONS		
E-	5.1025E-08	1.0761E-05	4.2272E-05
O	5.5787E-02	2.1686E-01	2.8152E-01
O+	1.4676E-09	7.3080E-06	3.5997E-05
O++	4.5793E-39	7.1226E-23	8.7319E-20
O-	1.0268E-07	6.2616E-05	2.2284E-04
O2	1.7831E-01	1.5695E-01	1.2647E-01
O2+	4.2978E-07	8.9881E-05	1.9820E-04
O2-	2.9517E-07	7.2481E-05	1.8240E-04
C	1.4511E-07	4.3431E-04	2.3867E-03
C+	1.6862E-12	5.6548E-07	7.2547E-06
C++	7.7347E-32	1.6745E-18	6.6595E-16
C-	1.5513E-13	8.6709E-08	1.3519E-06
CO	4.1173E-01	5.2967E-01	5.2967E-01
CO+	1.7624E-08	4.8191E-05	2.0741E-04
CO2	3.5417E-01	9.5791E-02	5.8989E-02
C2	3.3379E-11	6.3013E-06	7.3477E-05

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 4.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8098E+02	4.9353E+03	6.8371E+03
T	1.7623E+01	3.1722E+01	3.6923E+01
RHO	1.5443E+01	9.0952E+01	1.0291E+02
H	-3.1578E-01	-1.4378E+00	-1.8792E+00
A	4.7539E+00	7.2452E+00	7.9254E+00
S	1.7819E+00	1.9194E+00	1.9777E+00
Z	1.3959E+00	1.7106E+00	1.7993E+00
GAME	9.1608E-01	9.6739E-01	9.4546E-01
U	1.6611E+01	2.8246E+00	2.9321E+00

SPECIES	MOLE FRACTIONS		
E-	2.3421E-07	4.9386E-05	1.7621E-04
O	9.7590E-02	2.9603E-01	3.5190E-01
O+	1.4010E-08	3.9460E-05	1.4582E-04
O++	2.5258E-35	1.0645E-19	4.7751E-17
O-	5.4113E-07	2.3449E-04	7.1722E-04
O2	1.8838E-01	1.1902E-01	9.1504E-02
O2+	1.6989E-06	1.9332E-04	3.4826E-04
O2-	1.0604E-06	1.7219E-04	3.8376E-04
C	1.1415E-06	2.7207E-03	1.2011E-02
C+	4.1502E-11	8.5425E-06	7.4977E-05
C++	1.0825E-28	8.4378E-16	1.4518E-13
C-	3.8195E-12	1.5424E-06	1.7967E-05
CO	4.7372E-01	5.2856E-01	5.0901E-01
CO+	1.2276E-07	2.1628E-04	7.2610E-04
CO2	2.4030E-01	5.2674E-02	3.2293E-02
C2	5.7048E-10	8.0931E-05	7.0033E-04

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 5.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1317E+02	5.3058E+03	7.3918E+03
T	1.8537E+01	3.4034E+01	3.9365E+01
RMD	1.5372E+01	8.8490E+01	1.0163E+02
H	-4.2765E-01	-1.6427E+00	-2.1272E+00
A	4.9828E+00	7.5867E+00	8.2391E+00
S	1.8166E+00	1.9539E+00	2.0133E+00
Z	1.4500E+00	1.7617E+00	1.8477E+00
GAME	9.2375E-01	9.5995E-01	9.3332E-01
U	1.7297E+01	3.0093E+00	3.0825E+00

SPECIES	MOLE FRACTIONS		
E-	4.7921E-07	9.7030E-05	3.0401E-04
O	1.2444E-01	3.3024E-01	3.7801E-01
O+	3.9947E-08	7.7147E-05	2.4102E-04
O++	2.1849E-33	2.1544E-18	4.8046E-16
H	1.1480E-06	4.0652E-04	1.1021E-03
O2	1.8618E-01	1.0155E-01	7.9974E-02
O2+	3.1317E-06	2.5194E-04	4.2204E-04
O2-	1.8463E-06	2.4179E-04	5.0193E-04
C	3.0197E-06	5.9278E-03	2.1369E-02
C+	1.8988E-10	2.6362E-05	1.7220E-04
C++	4.0513E-27	1.1140E-14	1.0252E-12
C-	1.7195E-11	5.2900E-06	4.6083E-05
CO	4.9620E-01	5.2105E-01	4.9020E-01
CO+	3.0175E-07	3.9518E-04	1.1188E-03
CO2	1.9317E-01	3.9495E-02	2.4987E-02
C2	2.1752E-09	2.3936E-04	1.5451E-03

P1 = 5.00E+05 N/SQ-M, US1= 5.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.8108E+02	6.0279E+03	8.4411E+03
T	2.0545E+01	3.8480E+01	4.3715E+01
RMD	1.5068E+01	8.4500E+01	9.9417E+01
H	-6.6493E-01	-2.0758E+00	-2.6433E+00
A	5.4798E+00	8.1753E+00	8.8413E+00
S	1.8846E+00	2.0205E+00	2.0820E+00
Z	1.5541E+00	1.8538E+00	1.9423E+00
GAME	9.4049E-01	9.3691E-01	9.2065E-01
U	1.8655E+01	3.3318E+00	3.3347E+00

SPECIES	MOLE FRACTIONS		
E-	1.8549E-06	2.9358E-04	6.9020E-04
O	1.8896E-01	3.8375E-01	4.1956E-01
O+	2.7846E-07	2.1503E-04	5.1813E-04
O++	5.6436E-30	2.3355E-16	1.5618E-14
H	4.4773E-06	9.6750E-04	2.0769E-03
O2	1.6782E-01	7.6081E-02	6.5613E-02
O2+	9.2232E-06	3.6576E-04	5.7575E-04
O2-	4.7849E-06	4.0650E-04	7.4764E-04
C	1.8976E-05	1.9872E-02	4.7390E-02
C+	3.3530E-09	1.4967E-04	5.6232E-04
C++	2.9745E-24	6.1549E-13	1.8294E-11
C-	2.8817E-10	3.6964E-05	1.7492E-04
CO	5.2403E-01	4.9199E-01	4.3962E-01
CO+	1.6123E-06	9.7408E-04	2.0334E-03
CO2	1.1915E-01	2.3619E-02	1.6019E-02
C2	2.7448E-08	1.2703E-03	4.4148E-03

P1 = 5.00E+05 N/SQ-M, US1= 5.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.4655E+02	5.6700E+03	7.9250E+03
T	1.9509E+01	3.6312E+01	4.1609E+01
RMD	1.5245E+01	8.6317E+01	1.0053E+02
H	-5.4404E-01	-1.8553E+00	-2.3808E+00
A	5.2246E+00	7.8929E+00	8.5396E+00
S	1.8508E+00	1.9876E+00	2.0478E+00
Z	1.5014E+00	1.8090E+00	1.8946E+00
GAME	9.3189E-01	9.4837E-01	9.2504E-01
U	1.7979E+01	3.1803E+00	3.2084E+00

SPECIES	MOLE FRACTIONS		
E-	9.5398E-07	1.7625E-04	4.7468E-04
O	1.5507E-01	3.5933E-01	3.9999E-01
O+	1.0805E-07	1.3511E-04	3.6375E-04
O++	1.2170E-31	2.7634E-17	3.1583E-15
H	2.3190E-06	6.5166E-04	1.5579E-03
O2	1.7919E-01	8.7135E-02	7.1718E-02
O2+	5.5022E-06	3.0962E-04	4.9664E-04
O2-	3.0487E-06	3.2118E-04	6.2370E-04
C	7.6821E-06	1.1522E-02	3.3358E-02
C+	8.1848E-10	6.8396E-05	3.3105E-04
C++	1.1711E-25	9.9606E-14	4.9355E-12
C-	7.2288E-11	1.5300E-05	9.6599E-05
CO	5.1286E-01	5.0890E-01	4.6677E-01
CO+	7.1073E-07	6.5126E-04	1.5615E-03
CO2	1.5286E-01	3.0184E-02	1.9856E-02
C2	7.8787E-09	6.0150E-04	2.8067E-03

P1 = 5.00E+05 N/SQ-M, US1= 5.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.1676E+02	6.3773E+03	8.9325E+03
T	2.1654E+01	4.0510E+01	4.5708E+01
RMD	1.4847E+01	8.2951E+01	9.8149E+01
H	-7.9030E-01	-2.3040E+00	-2.9128E+00
A	5.7487E+00	8.4484E+00	9.1470E+00
S	1.9178E+00	2.0529E+00	2.1158E+00
Z	1.6073E+00	1.8978E+00	1.9911E+00
GAME	9.4949E-01	9.2839E-01	9.1932E-01
U	1.9326E+01	3.4648E+00	3.4504E+00

SPECIES	MOLE FRACTIONS		
E-	3.5376E-06	4.5107E-04	9.5086E-04
O	2.2528E-01	4.0469E-01	4.3745E-01
O+	6.8543E-07	3.1760E-04	7.0796E-04
O++	2.2309E-28	1.3984E-15	6.2674E-14
H	8.2938E-06	1.3434E-03	2.6469E-03
O2	1.5281E-01	6.7886E-02	6.0909E-02
O2+	1.4754E-05	4.2205E-04	6.6045E-04
O2-	7.1571E-06	4.9454E-04	8.7063E-04
C	4.5777E-05	3.0762E-02	6.2690E-02
C+	1.3212E-08	2.8267E-04	8.7092E-04
C++	6.7625E-23	2.7813E-12	5.5883E-11
C-	1.0978E-09	7.5755E-05	2.8312E-04
CO	5.3032E-01	4.7076E-01	4.1019E-01
CO+	3.5369E-06	1.3425E-03	2.5121E-03
CO2	9.1502E-02	1.8887E-02	1.3038E-02
C2	9.2841E-08	2.2854E-03	6.2128E-03

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 5.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.5355E+02	6.7151E+03	9.3978E+03
T	2.2849E+01	4.2410E+01	4.7634E+01
RHO	1.4588E+01	8.1520E+01	9.6640E+01
H	9.2015E-01	-2.5398E+00	-3.1897E+00
A	6.0318E+00	8.7212E+00	9.4594E+00
S	1.9503E+00	2.0851E+00	2.1494E+00
Z	1.6607E+00	1.9423E+00	2.0415E+00
GAME	9.5879E-01	9.2335E-01	9.2015E-01
U	1.9990E+01	3.5832E+00	3.5605E+00

SPECIES ----- MOLE FRACTIONS -----

E-	6.6550E-06	6.4879E-04	1.2615E-03
O	2.6294E-01	4.2329E-01	4.5418E-01
O+	1.6151E-06	4.4431E-04	9.4016E-04
O++	7.6066E-27	6.4347E-15	2.1691E-13
O-	1.4815E-05	1.7685E-03	3.2645E-03
O2	1.3513E-01	6.1772E-02	5.7048E-02
O2+	2.2515E-05	4.8048E-04	7.5163E-04
O2-	1.0238E-05	5.8322E-04	9.9090E-04
C	1.0855E-04	4.3631E-02	7.8770E-02
C+	5.0630E-08	4.7566E-04	1.2631E-03
C++	1.3937E-21	9.8576E-12	1.4883E-10
C-	4.0453E-09	1.3571E-04	4.2227E-04
CO	5.3252E-01	4.4609E-01	3.7945E-01
CO+	7.5310E-06	1.7358E-03	2.9843E-03
CO2	6.9235E-02	1.5346E-02	1.0634E-02
C2	3.0803E-07	3.6023E-03	8.0476E-03

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.3037E+02	7.3424E+03	1.0248E+04
T	2.5558E+01	4.5925E+01	5.1418E+01
RHO	1.3981E+01	7.8567E+01	9.2808E+01
H	-1.1932E+00	-3.0328E+00	-3.7674E+00
A	6.6350E+00	9.2785E+00	1.0111E+01
S	2.0131E+00	2.1486E+00	2.2162E+00
Z	1.7642E+00	2.0350E+00	2.1476E+00
GAME	9.7636E-01	9.2119E-01	9.2577E-01
U	2.1301E+01	3.7984E+00	3.7786E+00

SPECIES ----- MOLE FRACTIONS -----

E-	2.3253E-05	1.1680E-03	2.0664E-03
O	3.3694E-01	4.5621E-01	4.8484E-01
O+	7.9078E-06	7.8218E-04	1.5685E-03
O++	6.9442E-24	7.9689E-14	1.9476E-12
O-	4.3441E-05	2.7358E-03	4.6369E-03
O2	9.6347E-02	5.3255E-02	5.0578E-02
O2+	4.5258E-05	6.0809E-04	9.5374E-04
O2-	1.8662E-05	7.5645E-04	1.2154E-03
C	5.9602E-04	7.2914E-02	1.1198E-01
C+	6.8642E-07	1.0605E-03	2.3261E-03
C++	5.0836E-19	7.5184E-11	8.0565E-10
C-	5.2453E-08	3.2636E-04	7.9337E-04
CO	5.2807E-01	3.9055E-01	3.1689E-01
CO+	3.1556E-05	2.5358E-03	3.8638E-03
CO2	3.7873E-02	1.0382E-02	6.9948E-03
C2	3.3463E-06	6.7130E-03	1.1295E-02

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	5.9143E+02	7.0374E+03	9.8360E+03
T	2.4144E+01	4.4207E+01	4.9527E+01
RHO	1.4297E+01	8.0073E+01	9.4855E+01
H	-1.0545E+00	-2.7828E+00	-3.4745E+00
A	6.3282E+00	8.9978E+00	9.7804E+00
S	1.9821E+00	2.1170E+00	2.1828E+00
Z	1.7134E+00	1.9881E+00	2.0937E+00
GAME	9.6805E-01	9.2120E-01	9.2247E-01
U	2.0649E+01	3.6928E+00	3.6690E+00

SPECIES ----- MOLE FRACTIONS -----

E-	1.2441E-05	8.8752E-04	1.6299E-03
C	3.0063E-01	4.4035E-01	4.6995E-01
O+	3.6519E-06	5.9813E-04	1.2235E-03
O++	2.5039E-25	2.4380E-14	6.7560E-13
O-	2.5678E-05	2.2352E-03	3.9282E-03
O2	1.1590E-01	5.7051E-02	5.3676E-02
O2+	3.2738E-05	5.4237E-04	8.4947E-04
O2-	1.4067E-05	6.7105E-04	1.1065E-03
C	2.5514E-04	5.7879E-02	9.5286E-02
C+	1.8897E-07	7.3415E-04	1.7457E-03
C++	2.8104E-20	2.9165E-11	3.5917E-10
C-	1.4661E-08	2.1915E-04	5.9256E-04
CO	5.3151E-01	4.1898E-01	3.4814E-01
CO+	1.5622E-05	2.1382E-03	3.4385E-03
CO2	5.1594E-02	1.2588E-02	8.6508E-03
C2	1.0169E-06	5.1210E-03	9.7802E-03

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.40E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	6.7039E+02	7.6332E+03	1.0641E+04
T	2.7103E+01	4.7622E+01	5.3330E+01
RHO	1.3652E+01	7.6909E+01	9.0571E+01
H	-1.3364E+00	-3.2897E+00	-4.0688E+00
A	6.9433E+00	9.5698E+00	1.0451E+01
S	2.0432E+00	2.1805E+00	2.2495E+00
Z	1.8118E+00	2.0841E+00	2.2030E+00
GAME	9.8177E-01	9.2274E-01	9.2962E-01
U	2.1947E+01	3.9023E+00	3.8914E+00

SPECIES ----- MOLE FRACTIONS -----

E-	4.3606E-05	1.5012E-03	2.5841E-03
C	3.7031E-01	4.7141E-01	4.9880E-01
O+	1.6325E-05	1.0061E-03	1.9877E-03
O++	1.7140E-22	2.3824E-13	5.2976E-12
O-	7.2032E-05	3.2783E-03	5.3902E-03
O2	7.7786E-02	4.9975E-02	4.7632E-02
O2+	5.9300E-05	6.7910E-04	1.0642E-03
O2-	2.4031E-05	8.3974E-04	1.3160E-03
C	1.3828E-03	8.8675E-02	1.2863E-01
C+	2.4188E-06	1.4669E-03	3.0114E-03
C++	8.5121E-18	1.7781E-10	1.7052E-09
C-	1.8573E-07	4.5992E-04	1.0234E-03
CO	5.2278E-01	3.6095E-01	2.8620E-01
CO+	6.1811E-05	2.9270E-03	4.2504E-03
CO2	2.7449E-02	8.5392E-03	5.6098E-03
C2	1.0983E-05	8.2960E-03	1.2506E-02

TABLE I. - Continued

$$p_1 = 500 \text{ kN/m}^2$$

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.60E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.1155E+02	7.9203E+03	1.1031E+04
T	2.8765E+01	4.9299E+01	5.5290E+01
RHO	1.3335E+01	7.5271E+01	8.8299E+01
H	-1.4841E+00	-3.5539E+00	-4.3797E+00
A	7.2355E+00	9.8676E+00	1.0800E+01
S	2.0724E+00	2.2120E+00	2.2827E+00
Z	1.8550E+00	2.1344E+00	2.2595E+00
GAME	9.8115E-01	9.2535E-01	9.3360E-01
U	2.2590E+01	4.0087E+00	4.0091E+00

SPECIES	MOLE FRACTIONS		
E-	8.1394E-05	1.8879E-03	3.1980E-03
O	3.9932E-01	4.8564E-01	5.1171E-01
O+	3.1710E-05	1.2738E-03	2.4968E-03
O++	3.5292E-21	6.5761E-13	1.3813E-11
O-	1.1674E-04	3.8543E-03	6.1895E-03
O2	6.1528E-02	4.7109E-02	4.4789E-02
O2+	7.3491E-05	7.5514E-04	1.1812E-03
O2-	3.0170E-05	9.1992E-04	1.4082E-03
C	3.1313E-03	1.0457E-01	1.4503E-01
C+	8.0390E-06	1.9521E-03	3.8080E-03
C++	1.2406E-16	3.8949E-10	3.4757E-09
C-	6.4264E-07	6.1768E-04	1.2809E-03
CO	5.1572E-01	3.3136E-01	2.5650E-01
CO+	1.1571E-04	3.2988E-03	4.5906E-03
CO2	1.9802E-02	7.0154E-03	4.4576E-03
C2	3.5034E-05	9.7468E-03	1.3358E-02

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 7.00E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.9792E+02	8.5759E+03	1.1950E+04
T	3.2152E+01	5.2760E+01	5.9515E+01
RHO	1.2867E+01	7.2625E+01	8.4570E+01
H	-1.7931E+00	-4.1077E+00	-5.0405E+00
A	7.7115E+00	1.0493E+01	1.1527E+01
S	2.1281E+00	2.2740E+00	2.3485E+00
Z	1.9288E+00	2.2381E+00	2.3743E+00
GAME	9.5894E-01	9.3237E-01	9.4030E-01
U	2.3889E+01	4.2389E+00	4.2864E+00

SPECIES	MOLE FRACTIONS		
E-	2.5099E-04	2.8645E-03	4.7969E-03
O	4.4200E-01	5.1124E-01	5.3387E-01
O+	9.2697E-05	1.9889E-03	3.8798E-03
O++	5.6120E-19	4.4060E-12	8.8182E-11
O-	2.7108E-04	5.1412E-03	7.9603E-03
O2	3.9265E-02	4.2182E-02	3.9403E-02
O2+	9.7642E-05	9.3045E-04	1.4446E-03
O2-	4.4477E-05	1.0791E-03	1.5773E-03
C	1.2757E-02	1.3617E-01	1.7646E-01
C+	6.0452E-05	3.1947E-03	5.7648E-03
C++	1.1232E-14	1.6295E-09	1.3296E-08
C-	5.6148E-06	1.0103E-03	1.8739E-03
CO	4.9372E-01	2.7352E-01	2.0121E-01
CO+	3.2137E-04	3.9809E-03	5.1191E-03
CO2	1.0861E-02	4.6754E-03	2.7306E-03
C2	2.5845E-04	1.2025E-02	1.3913E-02

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 6.80E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	7.5401E+02	8.2269E+03	1.1459E+04
T	3.0482E+01	5.1001E+01	5.7352E+01
RHO	1.3064E+01	7.3795E+01	8.6230E+01
H	-1.6363E+00	-3.8263E+00	-4.7047E+00
A	7.4922E+00	1.0175E+01	1.1161E+01
S	2.1007E+00	2.2433E+00	2.3159E+00
Z	1.8935E+00	2.1859E+00	2.3171E+00
GAME	9.7254E-01	9.2868E-01	9.3732E-01
U	2.3236E+01	4.1200E+00	4.1486E+00

SPECIES	MOLE FRACTIONS		
E-	1.4749E-04	2.3391E-03	3.9330E-03
O	4.2311E-01	4.9895E-01	5.2351E-01
O+	5.6839E-05	1.5971E-03	3.1226E-03
O++	5.3913E-20	1.7299E-12	3.5334E-11
O-	1.8260E-04	4.4731E-03	7.0491E-03
O2	4.8599E-02	4.4529E-02	4.2029E-02
O2+	8.6438E-05	8.3828E-04	1.3081E-03
O2-	3.7026E-05	9.9070E-04	1.4951E-03
C	6.6622E-03	1.2048E-01	1.6113E-01
C+	2.3914E-05	2.5259E-03	4.7302E-03
C++	1.4040E-15	8.1138E-10	6.8935E-09
C-	2.0425E-06	8.0099E-04	1.5669E-03
CO	5.0634E-01	3.0207E-01	2.2791E-01
CO+	2.0197E-04	3.6509E-03	4.8832E-03
CO2	1.4450E-02	5.7404E-03	3.5016E-03
C2	1.0259E-04	1.1007E-02	1.3830E-02

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 7.20E+03 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.4347E+02	8.9824E+03	1.2530E+04
T	3.3458E+01	5.4603E+01	6.1811E+01
RHO	1.2752E+01	7.1809E+01	8.3394E+01
H	-1.9547E+00	-4.3993E+00	-5.3905E+00
A	7.9105E+00	1.0821E+01	1.1898E+01
S	2.1549E+00	2.3043E+00	2.3805E+00
Z	1.9629E+00	2.2908E+00	2.4308E+00
GAME	9.4605E-01	9.3610E-01	9.4223E-01
U	2.4553E+01	4.3668E+00	4.4317E+00

SPECIES	MOLE FRACTIONS		
E-	3.9399E-04	3.4776E-03	5.8132E-03
O	4.5731E-01	5.2242E-01	5.4275E-01
O+	1.3820E-04	2.4656E-03	4.7973E-03
O++	3.9122E-18	1.1018E-11	2.1669E-10
O-	3.7931E-04	5.8655E-03	8.9285E-03
O2	3.2932E-02	4.0005E-02	3.6894E-02
O2+	1.0768E-04	1.0333E-03	1.5925E-03
O2-	5.2412E-05	1.1609E-03	1.6560E-03
C	2.1588E-02	1.5149E-01	1.9093E-01
C+	1.2790E-04	3.9660E-03	6.9105E-03
C++	6.1843E-14	3.1896E-09	2.5104E-08
C-	1.2958E-05	1.2458E-03	2.1983E-03
CO	4.7747E-01	2.4603E-01	1.7650E-01
CO+	4.6488E-04	4.2849E-03	5.2956E-03
CO2	8.4830E-03	3.7853E-03	2.1122E-03
C2	5.4402E-04	1.2763E-02	1.3632E-02

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1 = 7.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	8.9063E+02	9.4424E+03	1.3192E+04
T	3.5099E+01	5.6538E+01	6.4234E+01
RHO	1.2703E+01	7.1263E+01	8.2617E+01
H	-2.1210E+00	-4.7009E+00	-5.7542E+00
A	8.1043E+00	1.1157E+01	1.2271E+01
S	2.1812E+00	2.3341E+00	2.4121E+00
Z	1.9976E+00	2.3436E+00	2.4859E+00
GAME	9.3678E-01	9.3954E-01	9.4293E-01
U	2.5226E+01	4.5036E+00	4.5830E+00

SPECIES	MOLE FRACTIONS		
E-	5.7307E-04	4.1923E-03	6.9978E-03
O	4.7046E-01	5.3248E-01	5.5014E-01
O+	1.9199E-04	3.0428E-03	5.8941E-03
H	1.9492E-17	2.7041E-11	5.2111E-10
O-	5.0321E-04	6.6448E-03	9.9397E-03
O2	2.8678E-02	3.7934E-02	3.4488E-02
O2+	1.1744E-04	1.1465E-03	1.7493E-03
O2-	6.0768E-05	1.2428E-03	1.7282E-03
C	3.2693E-02	1.6625E-01	2.0435E-01
C+	2.3212E-04	4.8615E-03	8.1474E-03
C++	2.4760E-13	6.0974E-09	4.6265E-08
C-	2.5476E-05	1.5051E-03	2.5299E-03
CO	4.5801E-01	2.1994E-01	1.5399E-01
CO+	6.2098E-04	4.5542E-03	5.4048E-03
CO2	6.8594E-03	3.0431E-03	1.6225E-03
C2	9.7237E-04	1.3189E-02	1.3028E-02

P1 = 5.00E+05 N/SQ-M, US1 = 7.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.8951E+02	1.0482E+04	1.4705E+04
T	3.7563E+01	6.0677E+01	6.9396E+01
RHO	1.2719E+01	7.0580E+01	8.1815E+01
H	-2.4675E+00	-5.3325E+00	-6.5191E+00
A	8.4971E+00	1.1842E+01	1.3005E+01
S	2.2331E+00	2.3925E+00	2.4738E+00
Z	2.0711E+00	2.4477E+00	2.5900E+00
GAME	9.2808E-01	9.4422E-01	9.4108E-01
U	2.6593E+01	4.7994E+00	4.8946E+00

SPECIES	MOLE FRACTIONS		
E-	1.0255E-03	5.9869E-03	9.9199E-03
O	4.9358E-01	5.4911E-01	5.6077E-01
O+	3.2386E-04	4.5601E-03	8.6695E-03
O++	2.4523E-16	1.5258E-10	2.7400E-09
O-	7.8872E-04	8.3391E-03	1.2002E-02
O2	2.3633E-02	3.3923E-02	2.9917E-02
O2+	1.3839E-04	1.3974E-03	2.0720E-03
O2-	7.8682E-05	1.3946E-03	1.8376E-03
C	5.9144E-02	1.9349E-01	2.2758E-01
C+	5.5753E-04	6.8878E-03	1.0776E-02
C++	2.0682E-12	2.0738E-08	1.4387E-07
C-	6.9545E-05	2.0751E-03	3.1640E-03
CO	4.1271E-01	1.7288E-01	1.1583E-01
CO+	9.4269E-04	4.9503E-03	5.4061E-03
CO2	4.8074E-03	1.9213E-03	9.4286E-04
C2	2.1815E-03	1.3083E-02	1.1120E-02

P1 = 5.00E+05 N/SQ-M, US1 = 7.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	9.3934E+02	9.9459E+03	1.3922E+04
T	3.6377E+01	5.8544E+01	6.6769E+01
RHO	1.2698E+01	7.0924E+01	8.2122E+01
H	-2.2919E+00	-5.0171E+00	-6.1307E+00
A	8.2992E+00	1.14E+01	1.2640E+01
S	2.2072E+00	2.3612E+00	2.4432E+00
Z	2.0336E+00	2.3551E+00	2.5391E+00
GAME	9.3109E-01	9.4221E-01	9.4246E-01
U	2.5907E+01	4.6447E+00	4.7381E+00

SPECIES	MOLE FRACTIONS		
E-	7.8430E-04	5.0130E-03	8.3637E-03
O	4.8238E-01	5.4126E-01	5.5611E-01
O+	2.5368E-04	3.7281E-03	7.1828E-03
O++	7.5497E-17	6.4465E-11	1.2166E-09
O-	6.4008E-04	7.4648E-03	1.0973E-02
O2	2.5745E-02	3.5949E-02	3.2161E-02
O2+	1.2756E-04	1.2677E-03	1.9108E-03
O2-	6.9527E-05	1.3216E-03	1.7899E-03
C	4.5410E-02	1.8013E-01	2.1658E-01
C+	3.7512E-04	5.8068E-03	9.4470E-03
C++	7.7937E-13	1.1314E-08	8.2878E-08
C-	4.4131E-05	1.7809E-03	2.8561E-03
CO	4.3617E-01	1.9577E-01	1.3377E-01
CO+	7.8168E-04	4.7777E-03	5.4416E-03
CO2	5.6926E-03	2.4346E-03	1.2394E-03
C2	1.5283E-03	1.3295E-02	1.2164E-02

P1 = 5.00E+05 N/SQ-M, US1 = 8.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0411E+03	1.1044E+04	1.5527E+04
T	3.8685E+01	6.2871E+01	7.2105E+01
RHO	1.2753E+01	7.0320E+01	8.1617E+01
H	-2.6478E+00	-5.6616E+00	-6.9185E+00
A	8.6987E+00	1.2183E+01	1.3367E+01
S	2.2588E+00	2.4212E+00	2.5040E+00
Z	2.1102E+00	2.4981E+00	2.6385E+00
GAME	9.2693E-01	9.4506E-01	9.3918E-01
U	2.7281E+01	4.9546E+00	5.0509E+00

SPECIES	MOLE FRACTIONS		
E-	1.2967E-03	7.0958E-03	1.1679E-02
O	5.0429E-01	5.5568E-01	5.6425E-01
O+	4.0380E-04	5.5282E-03	1.0361E-02
O++	7.0169E-16	3.4821E-10	5.9433E-09
O-	9.4891E-04	9.2315E-03	1.3008E-02
O2	2.2041E-02	3.1948E-02	2.7744E-02
O2+	1.5014E-04	1.5306E-03	2.2280E-03
O2-	8.8218E-05	1.4587E-03	1.8688E-03
C	7.5536E-02	2.0575E-01	2.3735E-01
C+	7.8012E-04	8.0355E-03	1.2106E-02
C++	4.8530E-12	3.6803E-08	2.4202E-07
C-	1.0215E-04	2.3710E-03	3.4428E-03
CO	3.8826E-01	1.5221E-01	9.9981E-02
CO+	1.1019E-03	5.0626E-03	5.3025E-03
CO2	4.1044E-03	1.5098E-03	7.1463E-04
C2	2.8982E-03	1.2595E-02	9.9724E-03

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+03 N/SQ-M, US1 = 8.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.0940E+03	1.1621E+04	1.6374E+04
T	3.9770E+01	6.5134E+01	7.4858E+01
RHO	1.2788E+01	7.0051E+01	8.1494E+01
H	-2.8325E+00	5.9988E+00	-7.3277E+00
A	8.9055E+00	1.2520E+01	1.3722E+01
S	2.2846E+00	2.4494E+00	2.5336E+00
Z	2.1510E+00	2.5470E+00	2.6841E+00
GAME	9.2710E-01	9.4486E-01	9.3715E-01
U	2.7969E+01	5.1134E+00	5.2054E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.6011E-03	8.3617E-03	1.3626E-02
O	5.1470E-01	5.6112E-01	5.6666E-01
O+	4.9571E-04	6.6494E-03	1.2235E-02
O++	1.8424E-15	7.6962E-10	1.2310E-08
O-	1.1217E-03	1.0133E-02	1.3957E-02
O2	2.0771E-02	2.9991E-02	2.5668E-02
O2+	1.6298E-04	1.6649E-03	2.3749E-03
O2-	9.8124E-05	1.5113E-03	1.8821E-03
C	8.8315E-02	2.1697E-01	2.4583E-01
C+	1.0460E-03	9.2410E-03	1.3394E-02
C++	1.0459E-11	6.3507E-08	3.9271E-07
C-	1.4252E-04	2.6620E-03	3.6814E-03
CO	3.6311E-01	1.3352E-01	8.6206E-02
CO+	1.2588E-03	5.1127E-03	5.1409E-03
CO2	3.5218E-03	1.1792E-03	5.4177E-04
C2	3.6488E-03	1.1881E-02	8.8044E-03

P1 = 5.00E+05 N/SQ-M, US1 = 8.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2038E+03	1.2829E+04	1.8147E+04
T	4.1866E+01	6.9831E+01	8.0556E+01
RHO	1.2862E+01	6.9635E+01	8.1380E+01
H	-3.2159E+00	-6.6992E+00	-8.1767E+00
A	9.3305E+00	1.3175E+01	1.4430E+01
S	2.3356E+00	2.5046E+00	2.5917E+00
Z	2.2357E+00	2.6383E+00	2.7682E+00
GAME	9.3013E-01	9.4211E-01	9.3381E-01
U	2.9348E+01	5.4314E+00	5.5086E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.3124E-03	1.1381E-02	1.8159E-02
O	5.3433E-01	5.6877E-01	5.6889E-01
O+	7.2142E-04	9.3693E-03	1.6566E-02
O++	1.0476E-14	3.3850E-09	4.7295E-08
O-	1.5024E-03	1.1904E-02	1.5646E-02
O2	1.8839E-02	2.6236E-02	2.1750E-02
O2+	1.9198E-04	1.9283E-03	2.6275E-03
O2-	1.1873E-04	1.5804E-03	1.8551E-03
C	1.1780E-01	2.3608E-01	2.5947E-01
C+	1.7081E-03	1.1723E-02	1.5808E-02
C++	4.0151E-11	1.7326E-07	9.4925E-07
C-	2.4636E-04	3.1937E-03	4.0262E-03
CO	3.1295E-01	1.0205E-01	6.3625E-02
CO+	1.5584E-03	5.0392E-03	4.6823E-03
CO2	2.6127E-03	7.1256E-04	3.0954E-04
C2	5.1110E-03	1.0031E-02	6.5805E-03

P1 = 5.00E+05 N/SQ-M, US1 = 8.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.1483E+03	1.2223E+04	1.7257E+04
T	4.0820E+01	6.7471E+01	7.7685E+01
RHO	1.2830E+01	6.9835E+01	8.1450E+01
H	-3.0220E+00	-6.3453E+00	-7.7480E+00
A	9.1148E+00	1.2852E+01	1.4077E+01
S	2.3100E+00	2.4774E+00	2.5628E+00
Z	2.1926E+00	2.5941E+00	2.7273E+00
GAME	9.2824E-01	9.4378E-01	9.3527E-01
U	2.8660E+01	5.2732E+00	5.3582E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	1.9365E-03	9.7970E-03	1.5788E-02
O	5.2465E-01	5.6548E-01	5.6816E-01
O+	6.0022E-04	7.9370E-03	1.4311E-02
O++	4.4908E-15	1.6508E-09	2.4614E-08
O-	1.3052E-03	1.1035E-02	1.4845E-02
O2	1.9739E-02	2.8076E-02	2.3669E-02
O2+	1.7686E-04	1.7993E-03	2.5098E-03
O2-	1.0830E-04	1.5526E-03	1.8781E-03
C	1.0304E-01	2.2713E-01	2.5319E-01
C+	1.3526E-03	1.0485E-02	1.4636E-02
C++	2.0960E-11	1.0676E-07	6.1970E-07
C-	1.9028E-04	2.9406E-03	3.8776E-03
CO	3.3807E-01	1.1675E-01	7.4129E-02
CO+	1.4106E-03	5.1035E-03	4.9307E-03
CO2	3.0355E-03	9.1649E-04	4.0972E-04
C2	4.3917E-03	1.1000E-02	7.6584E-03

P1 = 5.00E+05 N/SQ-M, US1 = 8.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.2606E+03	1.3444E+04	1.9049E+04
T	4.2913E+01	7.2297E+01	8.3508E+01
RHO	1.2885E+01	6.9340E+01	8.1256E+01
H	-3.4143E+00	-7.0612E+00	-8.6151E+00
A	9.5521E+00	1.3501E+01	1.4789E+01
S	2.3611E+00	2.5324E+00	2.6205E+00
Z	2.2798E+00	2.6818E+00	2.8073E+00
GAME	9.3265E-01	9.4010E-01	9.3287E-01
U	3.0035E+01	5.5898E+00	5.6570E+00

SPECIES	MOLE FRACTIONS	MOLE FRACTIONS	MOLE FRACTIONS
E-	2.7327E-03	1.3197E-02	2.0785E-02
O	5.4366E-01	5.7128E-01	5.6894E-01
O+	8.6198E-04	1.1010E-02	1.9027E-02
O++	2.3592E-14	6.8235E-09	8.8313E-08
O-	1.7132E-03	1.2757E-02	1.6353E-02
O2	1.8031E-02	2.4382E-02	1.9884E-02
O2+	2.0837E-04	2.0526E-03	2.7265E-03
O2-	1.2934E-04	1.5929E-03	1.8131E-03
C	1.3240E-01	2.4422E-01	2.6482E-01
C+	2.1149E-03	1.2986E-02	1.6919E-02
C++	7.4144E-11	2.7687E-07	1.4231E-06
C-	3.1082E-04	3.4235E-03	4.1280E-03
CO	2.8812E-01	8.8649E-02	5.4382E-02
CO+	1.7008E-03	4.9195E-03	4.4026E-03
CO2	2.2429E-03	5.4816E-04	3.2646E-04
C2	5.7792E-03	8.9844E-03	5.5821E-03

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 9.00E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3186E+03	1.4064E+04	1.9955E+04
T	4.3972E+01	7.4781E+01	8.6454E+01
RHO	1.2899E+01	6.9080E+01	8.1171E+01
H	-3.6173E+00	-7.4312E+00	-9.0615E+00
A	9.7801E+00	1.3820E+01	1.5141E+01
S	2.3866E+00	2.5594E+00	2.6483E+00
Z	2.3248E+00	2.7225E+00	2.8435E+00
GAME	9.3567E-01	9.3807E-01	9.3256E-01
U	3.0720E+01	5.7450E+00	5.7990E+00

SPECIES	MOLE FRACTIONS		
E-	3.2046E-03	1.5175E-02	2.3570E-02
O	5.5261E-01	5.7290E-01	5.6837E-01
O+	1.0258E-03	1.2802E-02	2.1600E-02
O++	5.1785E-14	1.3188E-08	1.5767E-07
D-	1.9384E-03	1.3550E-02	1.6939E-02
O2	1.7279E-02	2.2621E-02	1.8149E-02
O2+	2.2610E-04	2.1673E-03	2.8043E-03
O2-	1.4001E-04	1.5920E-03	1.7574E-03
C	1.4674E-01	2.5123E-01	2.6914E-01
C+	2.5783E-03	1.4205E-02	1.7928E-02
C++	1.3318E-10	4.2846E-07	2.0675E-06
C-	3.8389E-04	3.6166E-03	4.1830E-03
CO	2.6375E-01	7.7009E-02	4.8552E-02
CO+	1.8368E-03	4.7590E-03	4.1132E-03
CO2	1.9169E-03	4.2242E-04	1.7581E-04
C2	6.3752E-03	7.9530E-03	4.7105E-03

P1 = 5.00E+05 N/SQ-M, US1= 9.40E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4383E+03	1.5306E+04	2.1774E+04
T	4.6163E+01	7.9872E+01	9.2617E+01
RHO	1.2891E+01	6.8494E+01	8.0726E+01
H	-4.0368E+00	-8.1945E+00	-9.9859E+00
A	1.0257E+01	1.4453E+01	1.5871E+01
S	2.4374E+00	2.6127E+00	2.7038E+00
Z	2.4170E+00	2.7977E+00	2.9123E+00
GAME	9.4298E-01	9.3472E-01	9.3390E-01
U	3.2084E+01	6.0474E+00	6.0967E+00

SPECIES	MOLE FRACTIONS		
E-	4.3405E-03	1.9718E-02	2.9972E-02
O	5.6923E-01	5.7401E-01	5.6565E-01
O+	1.4429E-03	1.6886E-02	2.7314E-02
O++	2.3794E-13	4.4779E-08	4.7053E-07
O-	2.4350E-03	1.4939E-02	1.7758E-02
O2	1.5851E-02	1.9292E-02	1.4849E-02
O2+	2.6584E-04	2.3618E-03	2.8921E-03
O2-	1.6107E-04	1.5493E-03	1.5983E-03
C	1.7430E-01	2.6245E-01	2.7552E-01
C+	3.6998E-03	1.6506E-02	1.9777E-02
C++	4.0605E-10	9.5474E-07	4.1680E-06
C-	5.5649E-04	3.8893E-03	4.1673E-03
CO	2.1698E-01	5.7784E-02	3.3641E-02
CO+	2.0845E-03	4.3403E-03	3.5032E-03
CO2	1.3723E-03	2.4951E-04	9.8581E-05
C2	7.2816E-03	6.0257E-03	3.2562E-03

P1 = 5.00E+05 N/SQ-M, US1= 9.20E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.3779E+03	1.4687E+04	2.0867E+04
T	4.5052E+01	7.7307E+01	8.9506E+01
RHO	1.2901E+01	6.8807E+01	8.0986E+01
H	-3.8248E+00	-7.8092E+00	-9.5197E+00
A	1.0015E+01	1.4136E+01	1.5504E+01
S	2.4120E+00	2.5862E+00	2.6762E+00
Z	2.3706E+00	2.7611E+00	2.8787E+00
GAME	9.3914E-01	9.3622E-01	9.3290E-01
U	3.1404E+01	5.8946E+00	5.9503E+00

SPECIES	MOLE FRACTIONS		
E-	3.7369E-03	1.7347E-02	2.6647E-02
O	5.6115E-01	5.7378E-01	5.6726E-01
O+	1.2175E-03	1.4762E-02	2.4380E-02
O++	1.1165E-13	2.4681E-08	2.7607E-07
O-	2.1788E-03	1.4282E-02	1.7413E-02
O2	1.6558E-02	2.0925E-02	1.6457E-02
O2+	2.4523E-04	2.2712E-03	2.8600E-03
O2-	1.5063E-04	1.5774E-03	1.6845E-03
C	1.6073E-01	2.5729E-01	2.7271E-01
C+	3.1042E-03	1.5382E-02	1.8885E-02
C++	2.3431E-10	6.4699E-07	2.9623E-06
C-	4.6574E-04	3.7724E-03	4.1951E-03
CO	2.3999E-01	6.6771E-02	3.9627E-02
CO+	1.9651E-03	4.5633E-03	3.8089E-03
CO2	1.6281E-03	3.2493E-04	1.3182E-04
C2	6.8810E-03	6.9582E-03	3.9302E-03

P1 = 5.00E+05 N/SQ-M, US1= 9.60E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.4999E+03	1.5922E+04	2.2674E+04
T	4.7314E+01	8.2478E+01	9.5803E+01
RHO	1.2867E+01	6.8150E+01	8.0375E+01
H	-4.2533E+00	-8.5874E+00	-1.0461E+01
A	1.0507E+01	1.4769E+01	1.6246E+01
S	2.4627E+00	2.6390E+00	2.7311E+00
Z	2.4637E+00	2.8326E+00	2.9446E+00
GAME	9.4709E-01	9.3367E-01	9.3556E-01
U	3.2762E+01	6.1948E+00	6.2440E+00

SPECIES	MOLE FRACTIONS		
E-	5.0288E-03	2.2295E-02	3.3566E-02
O	5.7681E-01	5.7364E-01	5.6356E-01
O+	1.7093E-03	1.9172E-02	3.0405E-02
O++	5.0370E-13	7.8979E-08	7.8392E-07
O-	2.7078E-03	1.5513E-02	1.7969E-02
O2	1.5144E-02	1.7726E-02	1.3323E-02
O2+	2.8800E-04	2.4380E-03	2.9004E-03
O2-	1.7118E-04	1.5086E-03	1.5005E-03
C	1.8735E-01	2.6679E-01	2.7763E-01
C+	4.3752E-03	1.7574E-02	2.0619E-02
C++	6.9609E-10	1.3801E-06	5.7791E-06
C-	6.5612E-04	3.9673E-03	4.1035E-03
CO	1.9486E-01	4.9907E-02	2.8462E-02
CO+	2.1934E-03	4.0977E-03	3.2012E-03
CO2	1.1461E-03	1.9125E-04	7.3431E-05
C2	7.5648E-03	5.1712E-03	2.6798E-03

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 9.80E+03 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.5626E+03	1.6532E+04	2.3566E+04
T	4.8512E+01	8.5127E+01	9.9026E+01
RHO	1.2830E+01	6.7763E+01	7.9980E+01
H	-4.4743E+00	-8.9878E+00	-1.0947E+01
A	1.0764E+01	1.5088E+01	1.6623E+01
S	2.4879E+00	2.6650E+00	2.7576E+00
Z	2.5106E+00	2.8659E+00	2.9755E+00
GAME	9.5138E-01	9.3313E-01	9.3785E-01
U	3.3436E+01	6.3392E+00	6.3943E+00

SPECIES	MOLE FRACTIONS		
E-	5.8179E-03	2.5086E-02	3.7373E-02
O	5.8382E-01	5.7274E-01	5.6105E-01
O+	2.0256E-03	2.1617E-02	3.3599E-02
O++	1.0630E-12	1.3571E-07	1.2711E-06
O-	2.9976E-03	1.5996E-02	1.8046E-02
O2	1.4430E-02	1.6226E-02	1.1908E-02
O2+	3.1177E-04	2.4986E-03	2.8868E-03
O2-	1.8079E-04	1.4656E-03	1.3961E-03
C	1.9981E-01	2.7038E-01	2.7908E-01
C+	5.1332E-03	1.8584E-02	2.1409E-02
C++	1.1844E-09	1.9583E-06	7.8774E-06
C-	7.6445E-04	4.0078E-03	4.0104E-03
CO	1.7374E-01	4.3011E-02	2.4063E-02
CO+	2.2902E-03	3.8424E-03	2.9128E-03
CO2	9.4734E-04	1.4629E-04	5.4738E-05
C2	7.7223E-03	4.4025E-03	2.1996E-03

P1 = 5.00E+05 N/SQ-M, US1= 1.05E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.7908E+03	1.8578E+04	2.6578E+04
T	5.3210E+01	9.4761E+01	1.1131E+02
RHO	1.2600E+01	6.5961E+01	7.7507E+01
H	-5.2829E+00	-1.0444E+01	-1.2720E+01
A	1.1712E+01	1.6232E+01	1.8061E+01
S	2.5748E+00	2.7543E+00	2.8507E+00
Z	2.6712E+00	2.9723E+00	3.0807E+00
GAME	9.6515E-01	9.3547E-01	9.5126E-01
U	3.5768E+01	6.8424E+00	6.9419E+00

SPECIES	MOLE FRACTIONS		
E-	9.6809E-03	3.6641E-02	5.3419E-02
O	6.0309E-01	5.6589E-01	5.4848E-01
O+	3.7042E-03	3.1367E-02	4.6239E-02
O++	1.4718E-11	7.5655E-07	6.2724E-06
O-	4.1445E-03	1.6880E-02	1.7231E-02
O2	1.1830E-02	1.1527E-02	7.5577E-03
O2+	4.0833E-04	2.5768E-03	2.6659E-03
O2-	2.0763E-04	1.2025E-03	9.8560E-04
C	2.3740E-01	2.7783E-01	2.7989E-01
C+	8.6137E-03	2.1725E-02	2.4168E-02
C++	7.4067E-09	5.9150E-06	2.2180E-05
C-	1.2017E-03	3.8895E-03	3.4877E-03
CO	1.0950E-01	2.5093E-02	1.2790E-02
CO+	2.5086E-03	2.9308E-03	1.9935E-03
CO2	4.4175E-04	5.6163E-05	1.8337E-05
C2	7.2646E-03	2.3849E-03	1.0433E-03

P1 = 5.00E+05 N/SQ-M, US1= 1.00E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.6264E+03	1.7131E+04	2.4444E+04
T	4.9768E+01	8.7818E+01	1.0244E+02
RHO	1.2779E+01	6.7318E+01	7.9370E+01
H	-4.6998E+00	-9.3951E+00	-1.1441E+01
A	1.1029E+01	1.5410E+01	1.7023E+01
S	2.5129E+00	2.6908E+00	2.7849E+00
Z	2.5573E+00	2.8977E+00	3.0065E+00
GAME	9.5568E-01	9.3312E-01	9.4088E-01
U	3.4107E+01	6.4849E+00	6.5449E+00

SPECIES	MOLE FRACTIONS		
E-	6.7268E-03	2.8098E-02	4.1617E-02
O	5.9022E-01	5.7135E-01	5.5801E-01
O+	2.4025E-03	2.4216E-02	3.7054E-02
O++	2.2430E-12	2.2760E-07	2.0538E-06
O-	3.3047E-03	1.6379E-02	1.7978E-02
O2	1.3704E-02	1.4795E-02	1.0529E-02
O2+	3.3722E-04	2.5423E-03	2.8478E-03
O2-	1.8970E-04	1.3939E-03	1.2801E-03
C	2.1159E-01	2.7327E-01	2.7998E-01
C+	5.9894E-03	1.9539E-02	2.2207E-02
C++	2.0053E-09	2.7324E-06	1.0728E-05
C-	8.8099E-04	4.0127E-03	3.8853E-03
CO	1.5376E-01	3.6985E-02	2.0145E-02
CO+	2.3731E-03	3.5806E-03	2.6265E-03
CO2	7.7406E-04	1.1165E-04	4.0168E-05
C2	7.7497E-03	3.7220E-03	1.7835E-03

P1 = 5.00E+05 N/SQ-M, US1= 1.10E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	1.9623E+03	1.9973E+04	2.8667E+04
T	5.7132E+01	1.0209E+02	1.2102E+02
RHO	1.2373E+01	6.4323E+01	7.5105E+01
H	-5.8939E+00	-1.1539E+01	-1.4069E+01
A	1.2400E+01	1.7095E+01	1.9199E+01
S	2.6350E+00	2.8163E+00	2.9151E+00
Z	2.7759E+00	3.0417E+00	3.1541E+00
GAME	9.6951E-01	9.4119E-01	9.6573E-01
U	3.7414E+01	7.2024E+00	7.3814E+00

SPECIES	MOLE FRACTIONS		
E-	1.3925E-02	4.6698E-02	6.7287E-02
O	6.1069E-01	5.5780E-01	5.3588E-01
O+	5.7370E-03	3.9418E-02	5.6451E-02
O++	9.6974E-11	2.2614E-06	1.7829E-05
O-	5.0579E-03	1.6717E-02	1.5758E-02
O2	9.9446E-03	8.7281E-03	5.1943E-03
O2+	4.8922E-04	2.5104E-03	2.3869E-03
O2-	2.1723E-04	9.8354E-04	7.0774E-04
C	2.5679E-01	2.7917E-01	2.7693E-01
C+	1.1984E-02	2.3727E-02	2.6329E-02
C++	2.6767E-08	1.1994E-05	4.4460E-05
C-	1.5379E-03	3.6169E-03	3.0123E-03
CO	7.4712E-02	1.6762E-02	7.9147E-03
CO+	2.5273E-03	2.3322E-03	1.4735E-03
CO2	2.3377E-04	2.7750E-05	8.0777E-06
C2	6.1517E-03	1.4863E-03	5.9577E-04

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

P1 = 5.00E+05 N/SQ-M, US1= 1.15E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.1411E+03	2.1360E+04	3.0811E+04
T	6.1480E+01	1.0988E+02	1.3173E+02
RHO	1.2150E+01	6.2544E+01	7.2441E+01
H	-6.5330E+00	-1.2677E+01	-1.5493E+01
A	1.3051E+01	1.8014E+01	2.0455E+01
S	2.6930E+00	2.8763E+00	2.9775E+00
Z	2.8663E+00	3.1081E+00	3.2289E+00
GAME	9.6650E-01	9.5021E-01	9.8370E-01
U	3.9050E+01	7.5967E+00	7.8703E+00

SPECIES	MOLE FRACTIONS		
E-	1.9750E-02	5.8267E-02	8.3185E-02
O	6.1256E-01	5.4724E-01	5.2008E-01
O+	8.7755E-03	4.8304E-02	6.7695E-02
O++	6.0003E-10	6.2111E-06	4.7685E-05
O-	5.9684E-03	1.5947E-02	1.3792E-02
O2	8.1973E-03	6.4241E-03	3.4307E-03
O2+	5.7605E-04	2.3603E-03	2.0537E-03
O2-	2.1742E-04	7.6494E-04	4.7706E-04
C	2.6858E-01	2.7794E-01	2.7154E-01
C+	1.5989E-02	2.5691E-02	2.8888E-02
C++	9.0807E-08	2.3214E-05	8.7223E-05
C-	1.8392E-03	3.2515E-03	2.5197E-03
CC	4.9822E-02	1.1041E-02	4.7968E-03
CO+	2.4341E-03	1.8169E-03	1.0679E-03
CO2	1.1812E-04	1.3494E-05	3.4628E-06
C2	4.7742E-03	9.1001E-04	3.3546E-04

P1 = 5.00E+05 N/SQ-M, US1= 1.25E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.5229E+03	2.4294E+04	3.5561E+04
T	7.1035E+01	1.2730E+02	1.5644E+02
RHO	1.1800E+01	5.8900E+01	6.7052E+01
H	-7.8964E+00	-1.5100E+01	-1.8601E+01
A	1.4253E+01	2.0078E+01	2.3274E+01
S	2.8048E+00	2.9899E+00	3.0959E+00
Z	3.0099E+00	3.2401E+00	3.3901E+00
GAME	9.5009E-01	9.7738E-01	1.0214E+00
U	4.2334E+01	8.4913E+00	9.0221E+00

SPECIES	MOLE FRACTIONS		
E-	3.6474E-02	8.5749E-02	1.2049E-01
O	6.0134E-01	5.1906E-01	4.7898E-01
O+	1.8716E-02	6.8380E-02	9.3045E-02
O++	1.5450E-08	3.8624E-05	2.8105E-04
O-	7.4463E-03	1.3091E-02	9.5197E-03
O2	5.4123E-03	3.2058E-03	1.3736E-03
O2+	7.4358E-04	1.8996E-03	1.3764E-03
O2-	1.9428E-04	4.0284E-04	1.8849E-04
C	2.7604E-01	2.6955E-01	2.5471E-01
C+	2.4794E-02	3.0102E-02	3.5706E-02
C++	7.6809E-07	7.9508E-05	3.1092E-04
C-	2.1768E-03	2.4281E-03	1.6540E-03
CO	2.2187E-02	4.6220E-03	1.7124E-03
CO+	2.0297E-03	1.0539E-03	5.4184E-04
CO2	2.9582E-05	3.0664E-06	6.2257E-07
C2	2.4158E-03	3.3208E-04	1.0664E-04

P1 = 5.00E+05 N/SQ-M, US1= 1.20E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.3278E+03	2.2773E+04	3.3054E+04
T	6.6201E+01	1.1818E+02	1.4352E+02
RHO	1.1944E+01	6.0727E+01	6.9644E+01
H	-7.2004E+00	-1.3863E+01	-1.6999E+01
A	1.3668E+01	1.8996E+01	2.1821E+01
S	2.7501E+00	2.9337E+00	3.0378E+00
Z	2.9439E+00	3.1731E+00	3.3070E+00
GAME	9.5849E-01	9.6230E-01	1.0033E+00
U	4.0686E+01	8.0165E+00	8.4124E+00

SPECIES	MOLE FRACTIONS		
E-	2.7390E-02	7.1197E-02	1.0100E-01
O	6.0909E-01	5.3441E-01	5.0105E-01
O+	1.3114E-02	5.7893E-02	7.9938E-02
O++	3.3482E-09	1.5822E-05	1.1987E-04
O-	6.7929E-03	1.4697E-02	1.1621E-02
O2	6.6597E-03	4.6110E-03	2.1927E-03
O2+	6.6364E-04	2.1506E-03	1.7056E-03
O2-	2.0872E-04	5.6879E-04	3.0497E-04
C	2.7490E-01	2.7465E-01	2.6402E-01
C+	2.0421E-02	2.7752E-02	3.2003E-02
C++	2.8293E-07	4.3271E-05	1.6730E-04
C-	2.0610E-03	2.8457E-03	2.0564E-03
CO	3.2934E-02	7.2073E-03	2.8684E-03
CO+	2.2533E-03	1.3956E-03	7.6336E-04
CO2	5.8209E-05	6.5077E-06	1.4633E-06
C2	3.4551E-03	5.5344E-04	1.8824E-04

P1 = 5.00E+05 N/SQ-M, US1= 1.30E+04 M/SEC

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.7263E+03	2.5898E+04	3.8279E+04
T	7.5954E+01	1.3693E+02	1.6995E+02
RHO	1.1694E+01	5.7188E+01	6.4785E+01
H	-8.6211E+00	-1.6385E+01	-2.0291E+01
A	1.4834E+01	2.1214E+01	2.4723E+01
S	2.8584E+00	3.0426E+00	3.1508E+00
Z	3.0696E+00	3.3074E+00	3.4766E+00
GAME	9.4379E-01	9.9373E-01	1.0345E+00
U	4.3990E+01	9.0097E+00	9.6799E+00

SPECIES	MOLE FRACTIONS		
E-	4.6869E-02	1.0117E-01	1.4079E-01
O	5.9029E-01	5.0199E-01	4.5495E-01
O+	2.5602E-02	7.9237E-02	1.0642E-01
O++	6.0206E-08	8.7371E-05	5.9345E-04
O-	7.8806E-03	1.1375E-02	7.7188E-03
O2	4.3924E-03	2.2013E-03	8.6681E-04
O2+	8.1042E-04	1.6404E-03	1.0936E-03
O2-	1.7591E-04	2.7766E-04	1.1651E-04
C	2.7421E-01	2.6311E-01	2.4429E-01
C+	2.8915E-02	3.2742E-02	3.9783E-02
C++	1.8527E-06	1.4066E-04	5.4338E-04
C-	2.1547E-03	2.0442E-03	1.3333E-03
CO	1.5202E-02	2.9785E-03	1.0479E-03
CO+	1.7894E-03	7.9456E-04	3.8809E-04
CO2	1.5418E-05	1.4667E-06	2.7868E-07
C2	1.6540E-03	2.0204E-04	6.2726E-05

TABLE I.- Continued

$$p_1 = 500 \text{ kN/m}^2$$

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.35E+04 \text{ M/SEC}$
 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.40E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	2.9386E+03	2.7610E+04	4.1285E+04
T	8.0835E+01	1.4744E+02	1.8421E+02
RHO	1.1633E+01	5.5415E+01	6.2776E+01
H	-9.3746E+00	-1.7720E+01	-2.2081E+01
A	1.5412E+01	2.2435E+01	2.6177E+01
S	2.9096E+00	3.0943E+00	3.2047E+00
Z	3.1249E+00	3.3794E+00	3.5701E+00
GAME	9.4029E-01	1.0102E+00	1.0420E+00
U	4.5660E+01	9.5943E+00	1.0396E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.1589E+03	2.9369E+04	4.4383E+04
T	8.5776E+01	1.5831E+02	1.9816E+02
RHO	1.1583E+01	5.3714E+01	6.1105E+01
H	-1.0157E+01	-1.9102E+01	-2.3921E+01
A	1.6005E+01	2.3659E+01	2.7552E+01
S	2.9598E+00	3.1432E+00	3.2552E+00
Z	3.1794E+00	3.4536E+00	3.6654E+00
GAME	9.3936E-01	1.0238E+00	1.0451E+00
U	4.7331E+01	1.0209E+01	1.1057E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	5.8074E-02	1.1805E-01	1.6226E-01
O	5.7701E-01	4.8257E-01	4.2871E-01
O+	3.3481E-02	9.0861E-02	1.2025E-01
O++	1.9704E-07	1.8933E-04	1.1484E-03
O-	8.1090E-03	9.6321E-03	6.2193E-03
O2	3.5757E-03	1.4760E-03	5.4946E-04
O2+	8.5966E-04	1.3799E-03	8.5497E-04
O2-	1.5617E-04	1.8454E-04	7.2150E-05
C	2.7066E-01	2.5525E-01	2.3284E-01
C+	3.2571E-02	3.5859E-02	4.4148E-02
C++	3.9731E-06	2.4496E-04	9.0064E-04
C-	2.1381E-03	1.6940E-03	1.0791E-03
CO	1.0666E-02	1.9001E-03	6.5328E-04
CO+	1.5575E-03	5.9249E-04	2.7892E-04
CO2	8.3782E-06	6.9407E-07	1.2980E-07
C2	1.1317E-03	1.2264E-04	3.7990E-05

SPECIES	-----	MOLE FRACTIONS	-----
E-	7.0157E-02	1.3548E-01	1.8340E-01
O	5.6180E-01	4.6186E-01	4.0229E-01
O+	4.2361E-02	1.0261E-01	1.3351E-01
O++	5.7032E-07	3.7826E-04	1.9746E-03
O-	8.1381E-03	8.0620E-03	5.0734E-03
O2	2.8956E-03	9.9125E-04	3.6106E-04
O2+	8.8920E-04	1.1441E-03	6.7028E-04
O2-	1.3552E-04	1.2183E-04	4.6410E-05
C	2.6605E-01	2.4649E-01	2.2143E-01
C+	3.5852E-02	3.9292E-02	4.8318E-02
C++	7.8633E-06	4.0740E-04	1.3773E-03
C-	2.0279E-03	1.4018E-03	8.9134E-04
CO	7.5643E-03	1.2320E-03	4.2731E-04
CO+	1.3382E-03	4.4426E-04	2.0539E-04
CO2	4.6459E-06	3.3958E-07	6.5875E-08
C2	7.7125E-04	7.6415E-05	2.4408E-05

 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.45E+04 \text{ M/SEC}$
 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.50E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.3871E+03	3.1138E+04	4.7572E+04
T	9.0814E+01	1.6957E+02	2.1186E+02
RHO	1.1531E+01	5.1989E+01	5.9658E+01
H	-1.0967E+01	-2.0528E+01	-2.5833E+01
A	1.6623E+01	2.4878E+01	2.8888E+01
S	3.0092E+00	3.1908E+00	3.3039E+00
Z	3.2345E+00	3.5321E+00	3.7639E+00
GAME	9.4074E-01	1.0334E+00	1.0465E+00
U	4.9002E+01	1.0865E+01	1.1720E+01

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.6230E+03	3.2932E+04	5.0830E+04
T	9.5941E+01	1.8065E+02	2.2525E+02
RHO	1.1475E+01	5.0479E+01	5.8384E+01
H	-1.1806E+01	-2.2000E+01	-2.7809E+01
A	1.7266E+01	2.6033E+01	3.0201E+01
S	3.0573E+00	3.2355E+00	3.3511E+00
Z	3.2908E+00	3.6114E+00	3.8651E+00
GAME	9.4420E-01	1.0388E+00	1.0477E+00
U	5.0668E+01	1.1526E+01	1.2378E+01

SPECIES	-----	MOLE FRACTIONS	-----
E-	8.3043E-02	1.5364E-01	2.0433E-01
O	5.4500E-01	4.3975E-01	3.7578E-01
O+	5.2135E-02	1.1458E-01	1.4625E-01
O++	1.4960E-06	7.0397E-04	3.1011E-03
O-	7.9842E-03	6.6935E-03	4.1829E-03
O2	2.3247E-03	6.6657E-04	2.4396E-04
O2+	8.9792E-04	9.3579E-04	5.2642E-04
O2-	1.1487E-04	8.0074E-05	3.0772E-05
C	2.6073E-01	2.3693E-01	2.1016E-01
C+	3.8822E-02	4.3016E-02	5.2202E-02
C++	1.4629E-05	6.5004E-04	1.9787E-03
C-	1.8823E-03	1.1605E-03	7.4864E-04
CC	5.3956E-03	8.0933E-04	2.9001E-04
CO+	1.1364E-03	3.3417E-04	1.5403E-04
CO2	2.6078E-06	1.7075E-07	3.5691E-08
C2	5.2427E-04	4.8669E-05	1.6414E-05

SPECIES	-----	MOLE FRACTIONS	-----
E-	9.6518E-02	1.7154E-01	2.2488E-01
O	5.2701E-01	4.1756E-01	3.4959E-01
O+	6.2572E-02	1.2609E-01	1.5832E-01
O++	3.5940E-06	1.1957E-03	4.5265E-03
O-	7.6751E-03	5.5913E-03	3.4830E-03
O2	1.8503E-03	4.5918E-04	1.6893E-04
O2+	8.8654E-04	7.6520E-04	4.1471E-04
O2-	9.5307E-05	5.3893E-05	2.0958E-05
C	2.5493E-01	2.2725E-01	1.9921E-01
C+	4.1533E-02	4.6710E-02	5.5719E-02
C++	2.5806E-05	9.7602E-04	2.7013E-03
C-	1.7182E-03	9.7315E-04	6.3811E-04
CC	3.8701E-03	5.5029E-04	2.0315E-04
CO+	9.5658E-04	2.5569E-04	1.1743E-04
CO2	1.4816E-06	9.1374E-08	2.0433E-08
C2	3.5720E-04	3.2360E-05	1.1477E-05

TABLE I.- Concluded

$$p_1 = 500 \text{ kN/m}^2$$

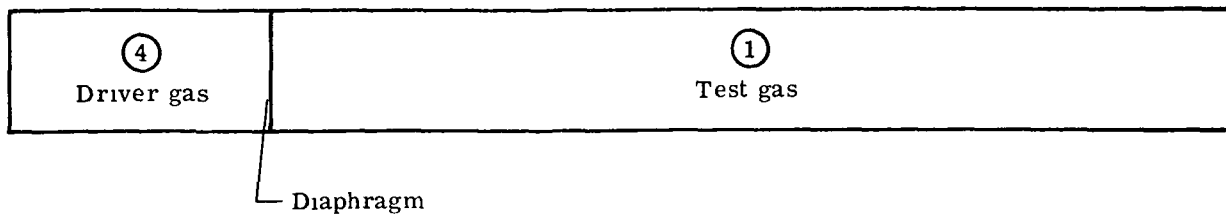
 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.55E+04 \text{ M/SEC}$
 $P_1 = 5.00E+05 \text{ N/SQ-M}, \quad US_1 = 1.60E+04 \text{ M/SEC}$

	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	3.8663E+03	3.4705E+04	5.4090E+04
T	1.0120E+02	1.9171E+02	2.3824E+02
RHO	1.1407E+01	4.9001E+01	5.7211E+01
H	-1.2672E+01	-2.3515E+01	-2.9839E+01
A	1.7940E+01	2.7156E+01	3.1497E+01
S	3.1044E+00	3.2794E+00	3.3969E+00
Z	3.3490E+00	3.6944E+00	3.9684E+00
GAME	9.4957E-01	1.0412E+00	1.0493E+00
U	5.2328E+01	1.2210E+01	1.3007E+01

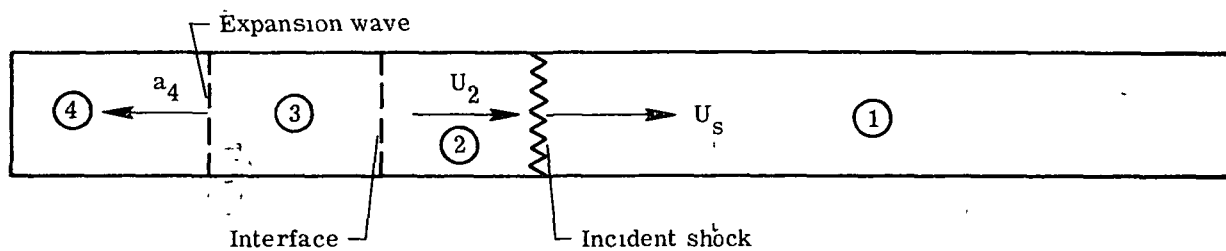
	MOVING SHOCK	STANDING SHOCK	REFLECTED SHOCK
P	4.1168E+03	3.6486E+04	5.7335E+04
T	1.0664E+02	2.0259E+02	2.5096E+02
RHO	1.1323E+01	4.7650E+01	5.6074E+01
H	-1.3567E+01	-2.5076E+01	-3.1934E+01
A	1.8650E+01	2.8248E+01	3.2792E+01
S	3.1505E+00	3.3222E+00	3.4417E+00
Z	3.4096E+00	3.7797E+00	4.0743E+00
GAME	9.5669E-01	1.0421E+00	1.0517E+00
U	5.3977E+01	1.2849E+01	1.3641E+01

SPECIES	MOLE FRACTIONS		
E-	1.1055E-01	1.8965E-01	2.4485E-01
O	5.0802E-01	3.9484E-01	3.2411E-01
O+	7.3567E-02	1.3740E-01	1.6955E-01
O++	8.0562E-06	1.8982E-03	6.2287E-03
-O-	7.2380E-03	4.6840E-03	2.9256E-03
O2	1.4563E-03	3.2054E-04	1.1952E-04
O2+	8.5683E-04	6.2297E-04	3.2810E-04
O2-	7.7311E-05	3.6738E-05	1.4606E-05
C	2.4872E-01	2.1734E-01	1.8869E-01
C+	4.4090E-02	5.0377E-02	5.8843E-02
C++	4.3744E-05	1.4017E-03	3.5381E-03
C-	1.5461E-03	8.2282E-04	5.5070E-04
CO	2.7799E-03	3.8216E-04	1.4623E-04
CO+	7.9840E-04	1.9737E-04	9.0900E-05
CO2	8.4592E-07	5.0831E-08	1.2249E-08
C2	2.4366E-07	2.2129E-05	8.2963E-06

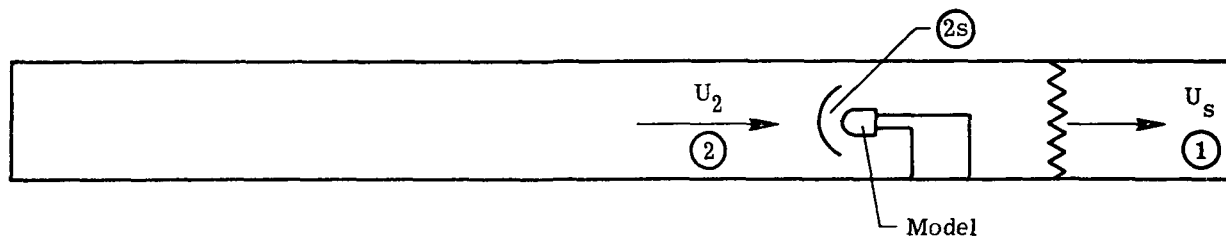
SPECIES	MOLE FRACTIONS		
E-	1.2508E-01	2.0760E-01	2.6433E-01
O	4.8821E-01	3.7216E-01	2.9938E-01
O+	8.4986E-02	1.4826E-01	1.7993E-01
O++	1.7047E-05	2.8264E-03	8.2064E-03
O-	6.7039E-03	3.9504E-03	2.4701E-03
O2	1.1320E-03	2.2791E-04	8.5801E-05
O2+	8.1154E-04	5.0731E-04	2.6009E-04
O2-	6.1315E-05	2.5544E-05	1.0331E-05
C	2.4214E-01	2.0751E-01	1.7855E-01
C+	4.6584E-02	5.3856E-02	6.1617E-02
C++	7.1856E-05	1.9262E-03	4.4960E-03
C-	1.3742E-03	7.0346E-04	4.7926E-04
CO	1.9955E-03	2.7207E-04	1.0727E-04
CO+	6.6116E-04	1.5417E-04	7.1124E-05
CO2	4.8362E-07	2.9554E-08	7.5829E-09
C2	1.6640E-04	1.5608E-05	6.1433E-06



(a) Prior to diaphragm rupture.



(b) Incident (moving) normal shock in test gas.

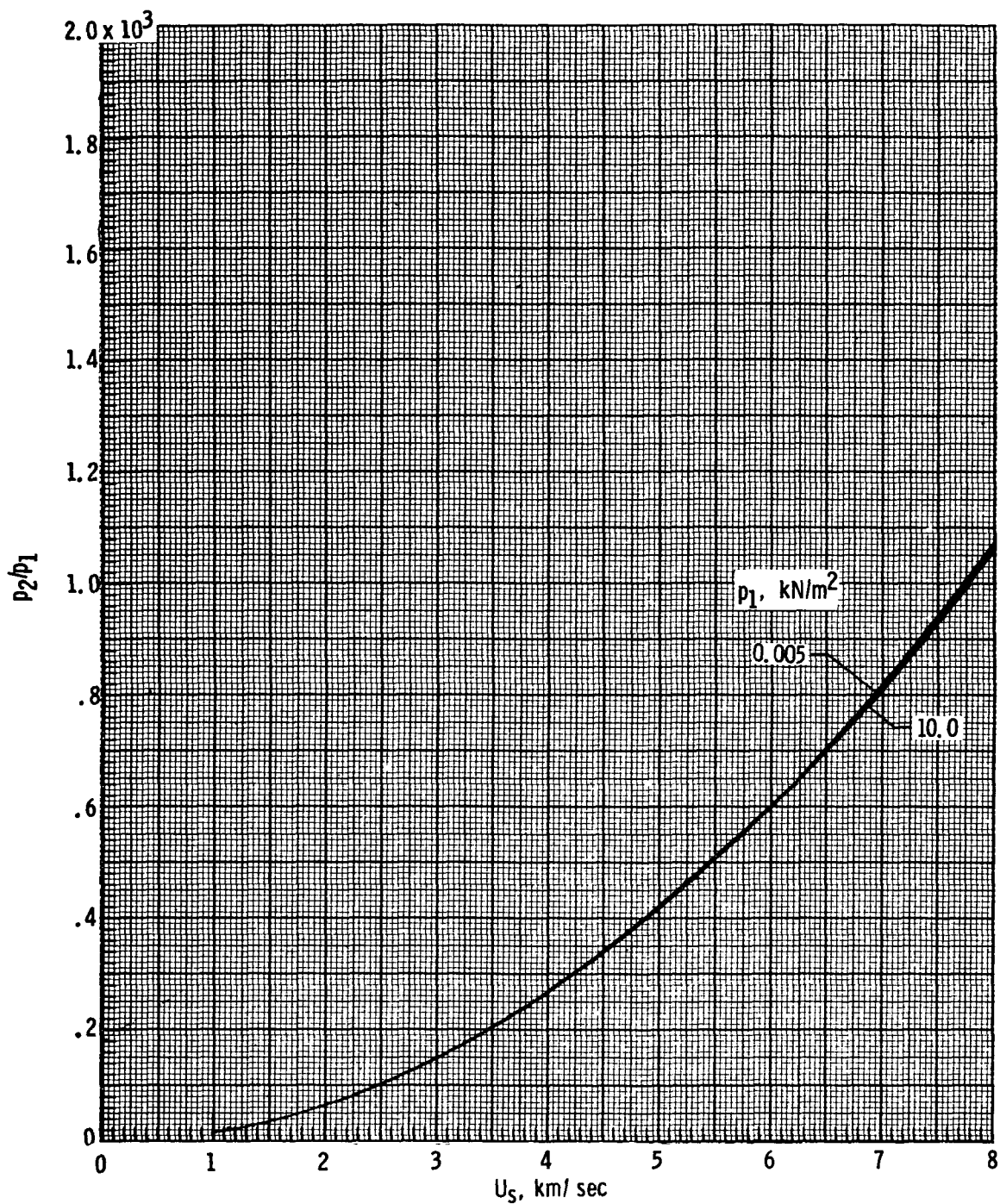


(c) Standing normal shock at test model.



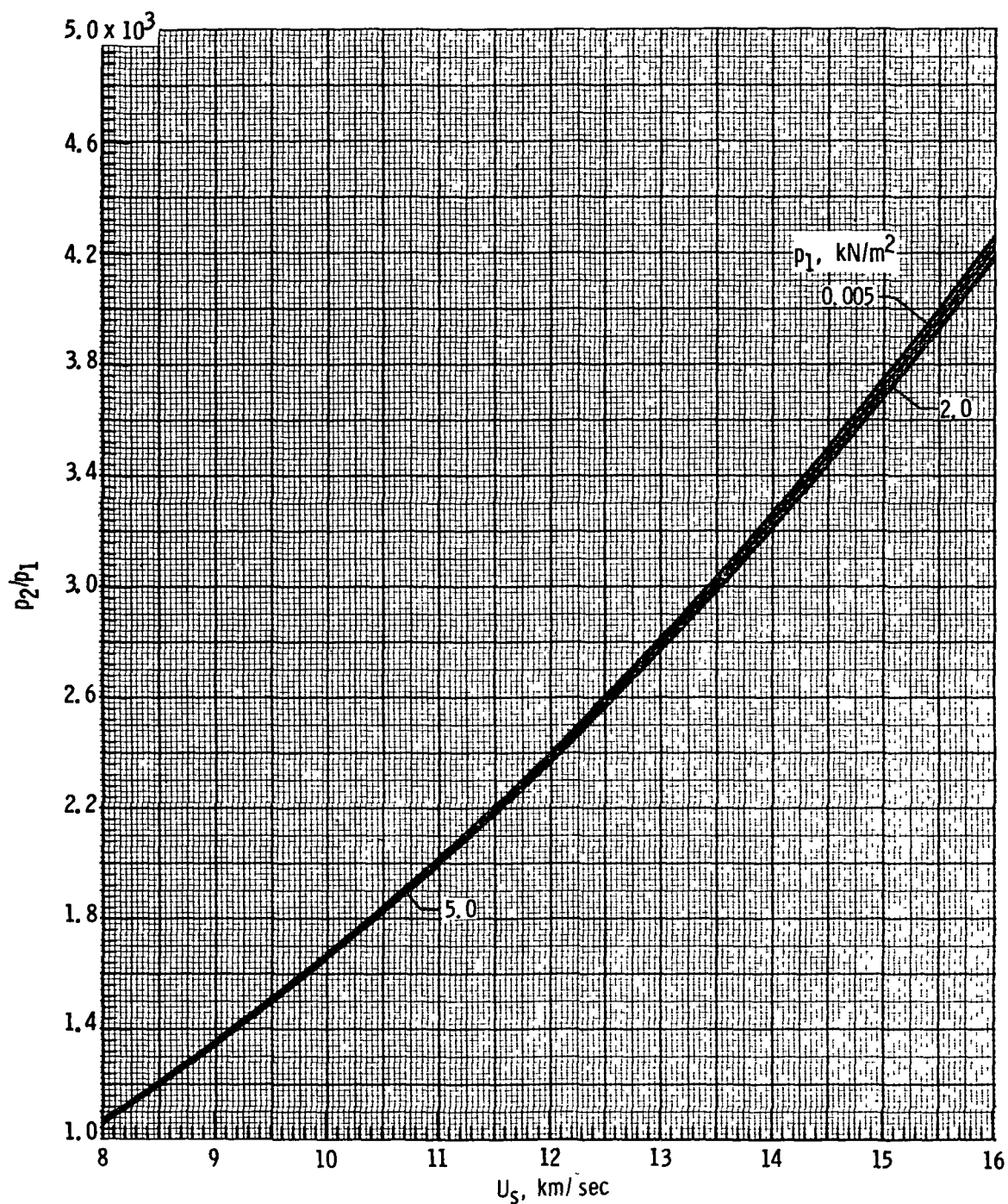
(d) Reflected normal shock from end wall.

Figure 1.- Sketches illustrating shock-tube regions of interest:
Regions (2), (2s), and (2r).



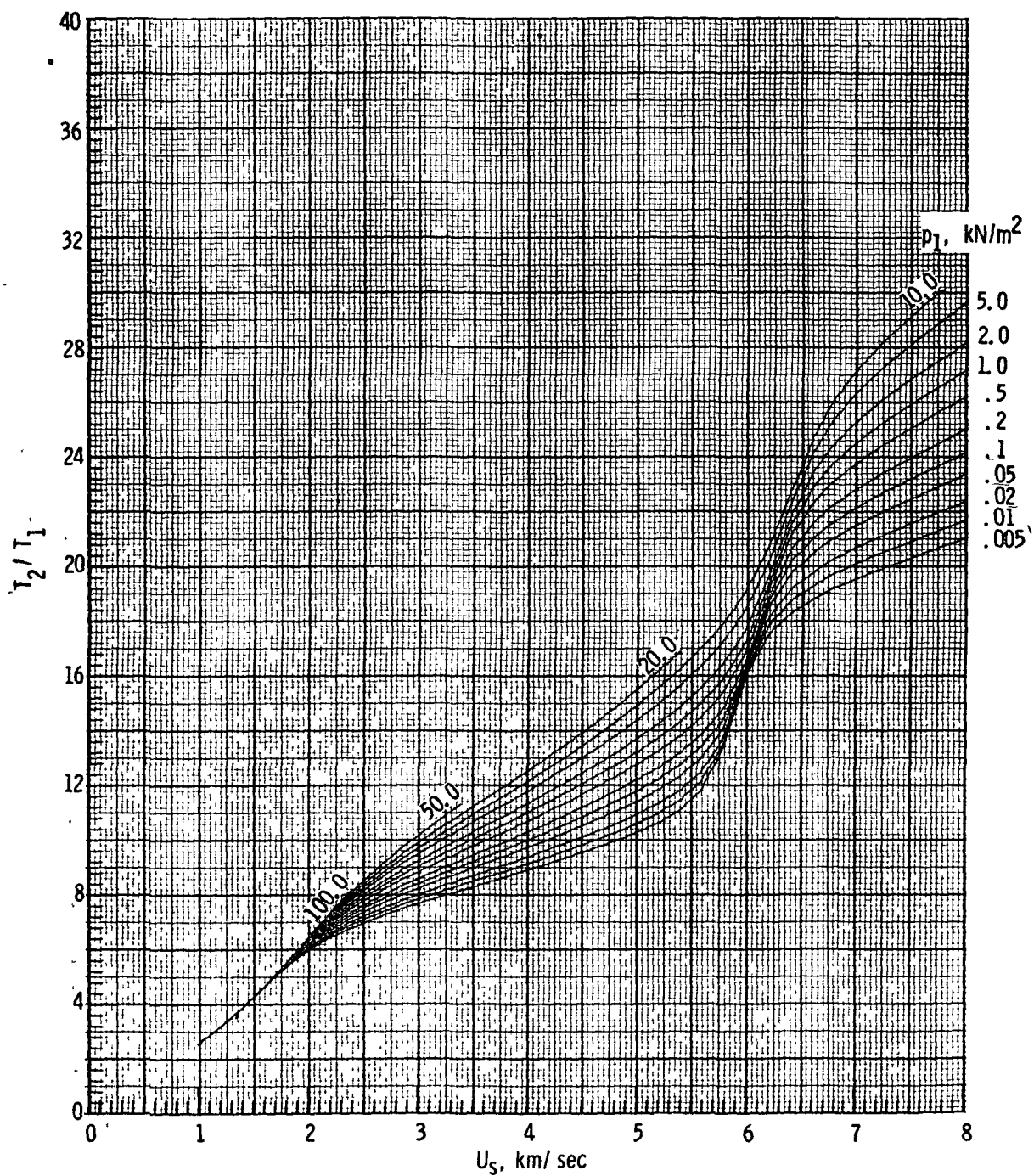
(a) Pressure, p_2/p_1 .

Figure 2.- Thermodynamic properties and flow velocity behind an incident normal shock into pure CO_2 .

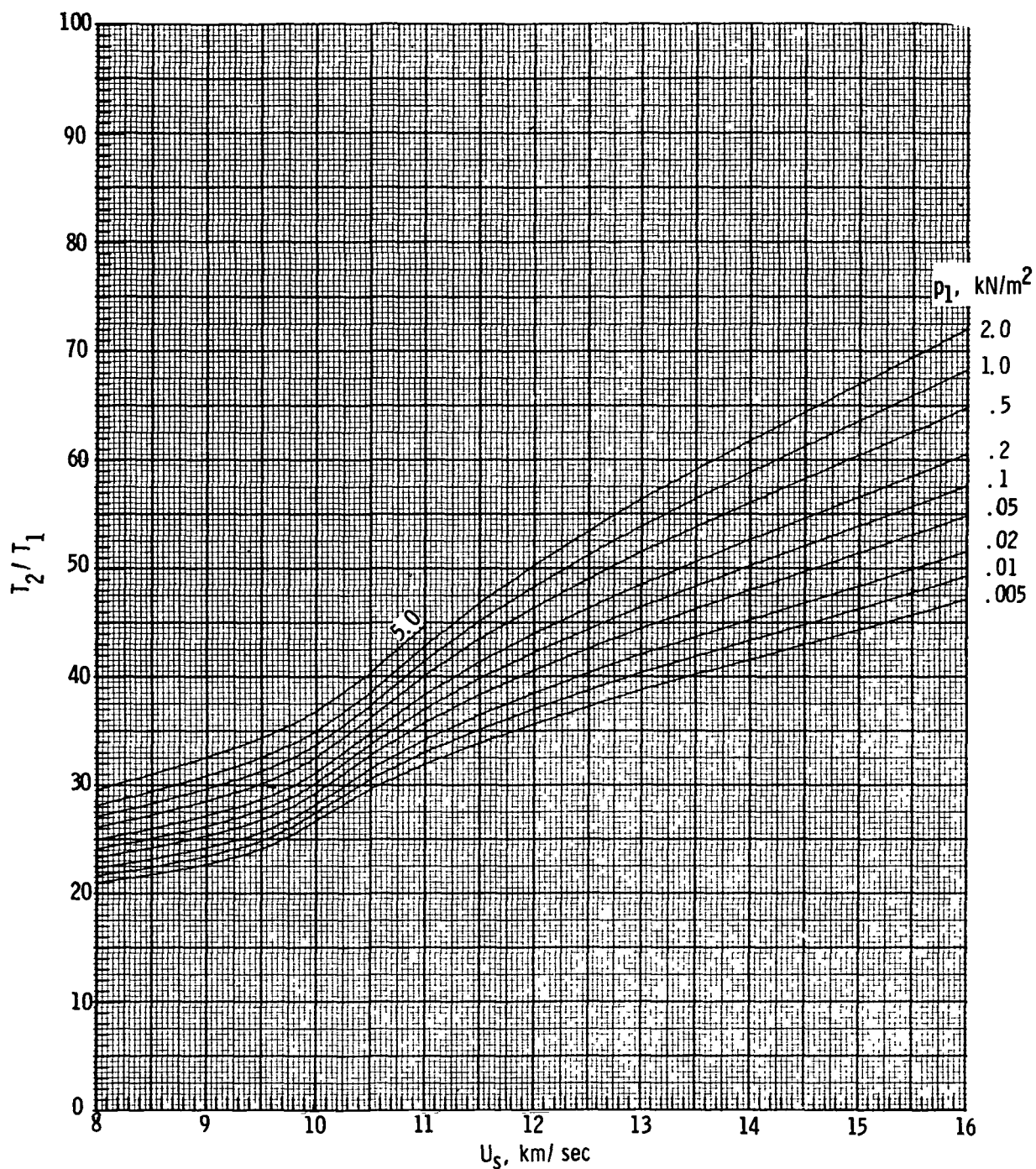


(a) Concluded.

Figure 2.- Continued.

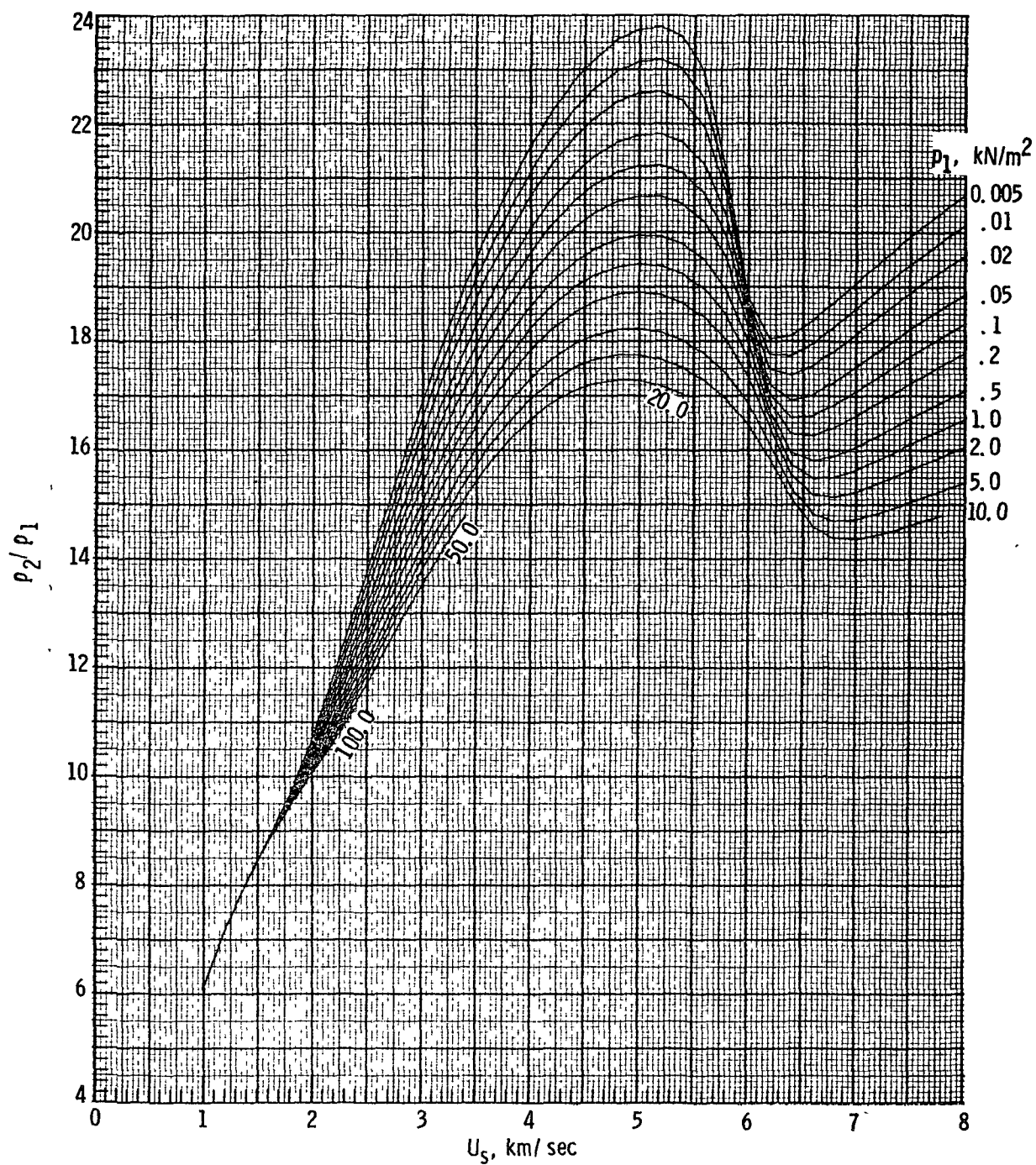


(b) Temperature, T_2/T_1 .
Figure 2.- Continued.

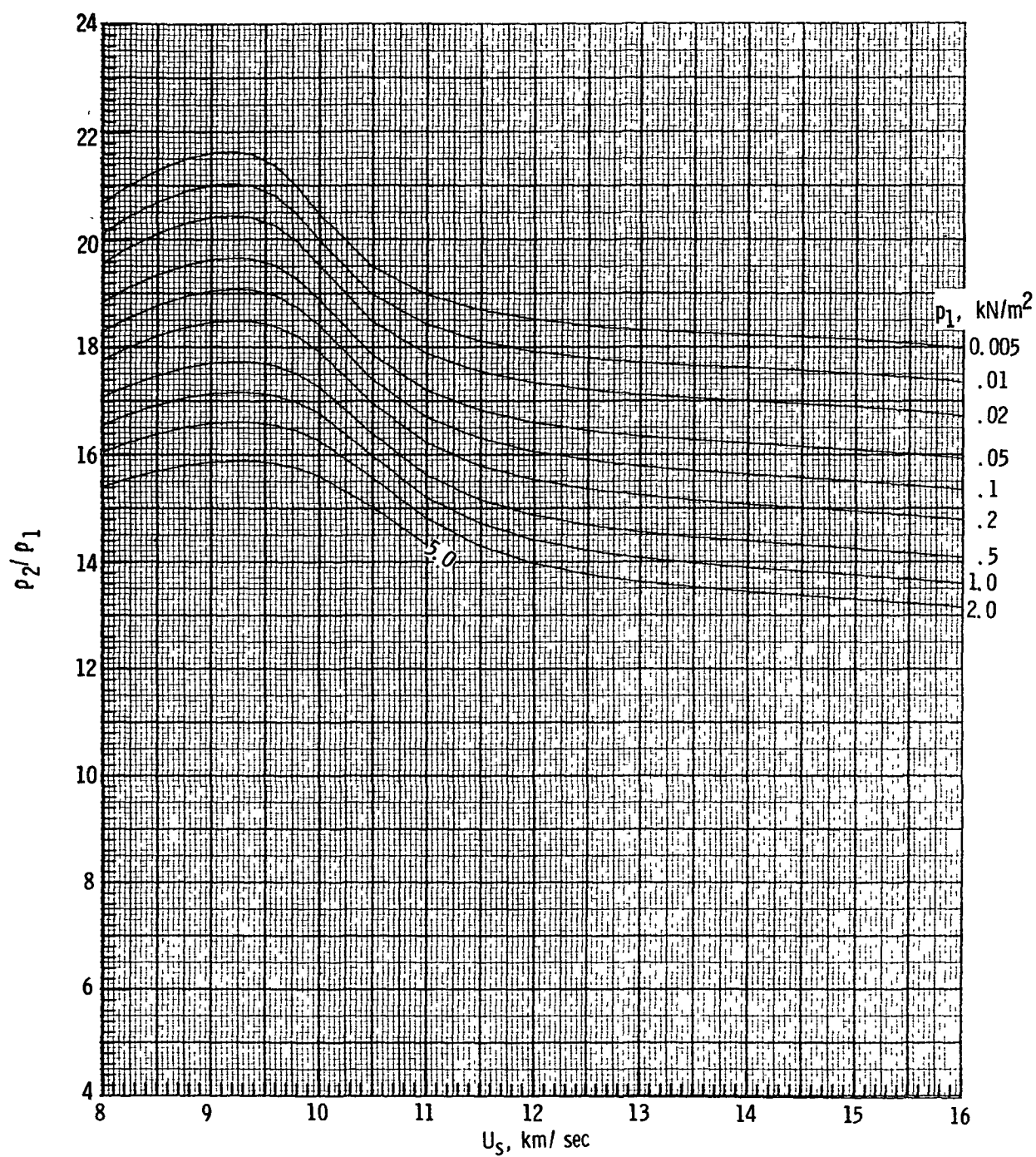


(b) Concluded.

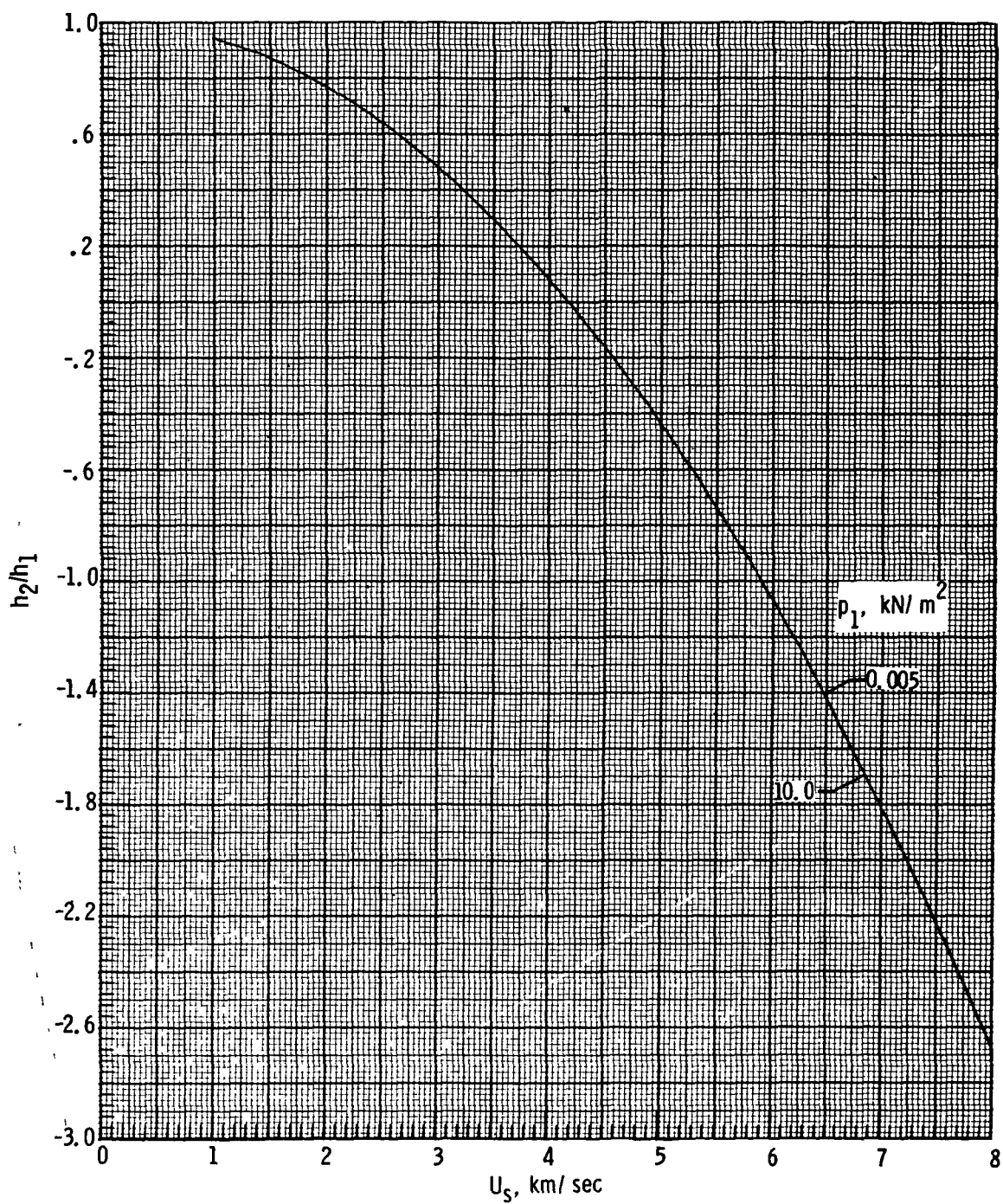
Figure 2.- Continued.



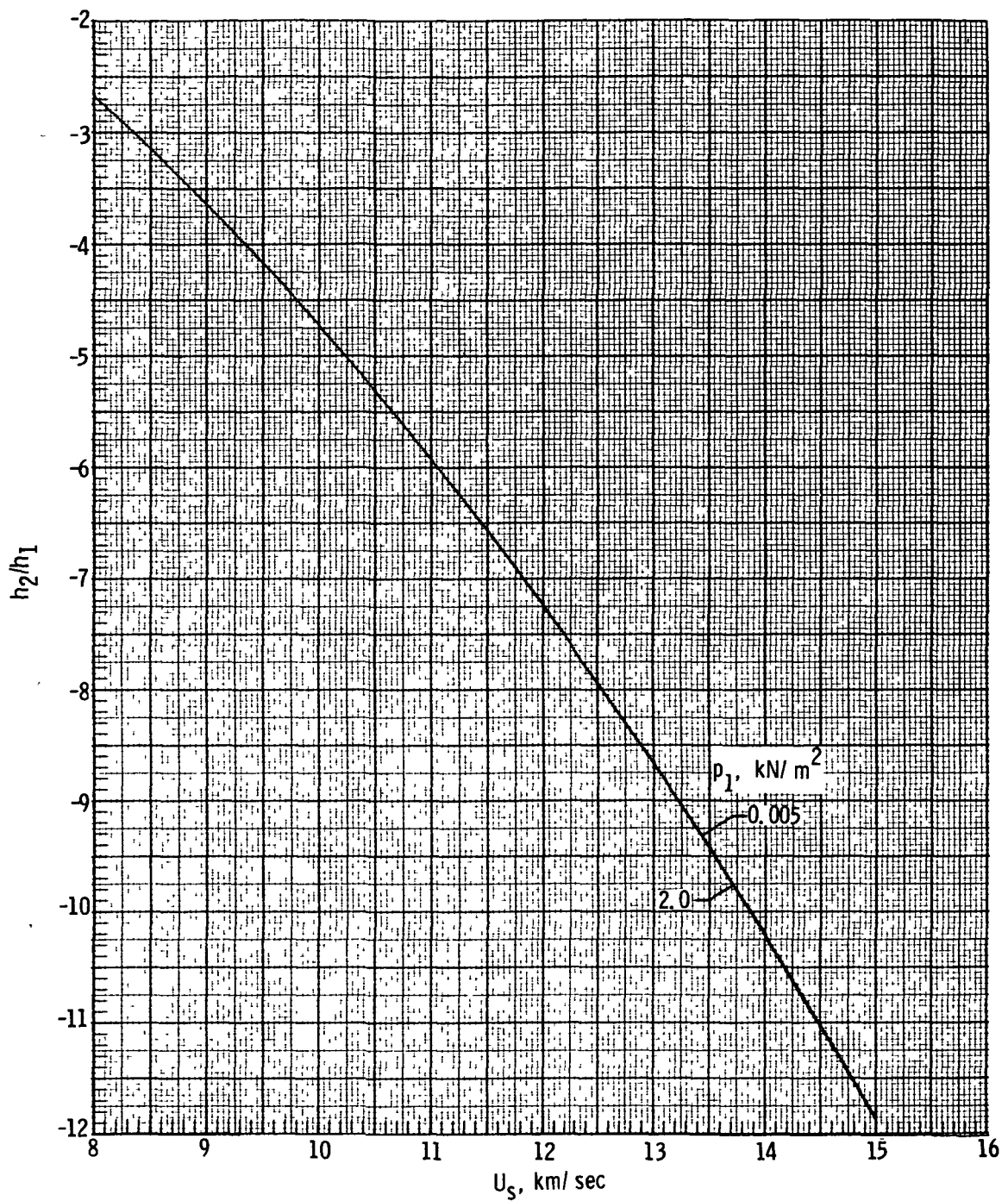
(c) Density ratio, ρ_2/ρ_1 .
Figure 2.- Continued.



(c) Concluded.
Figure 2.- Continued.

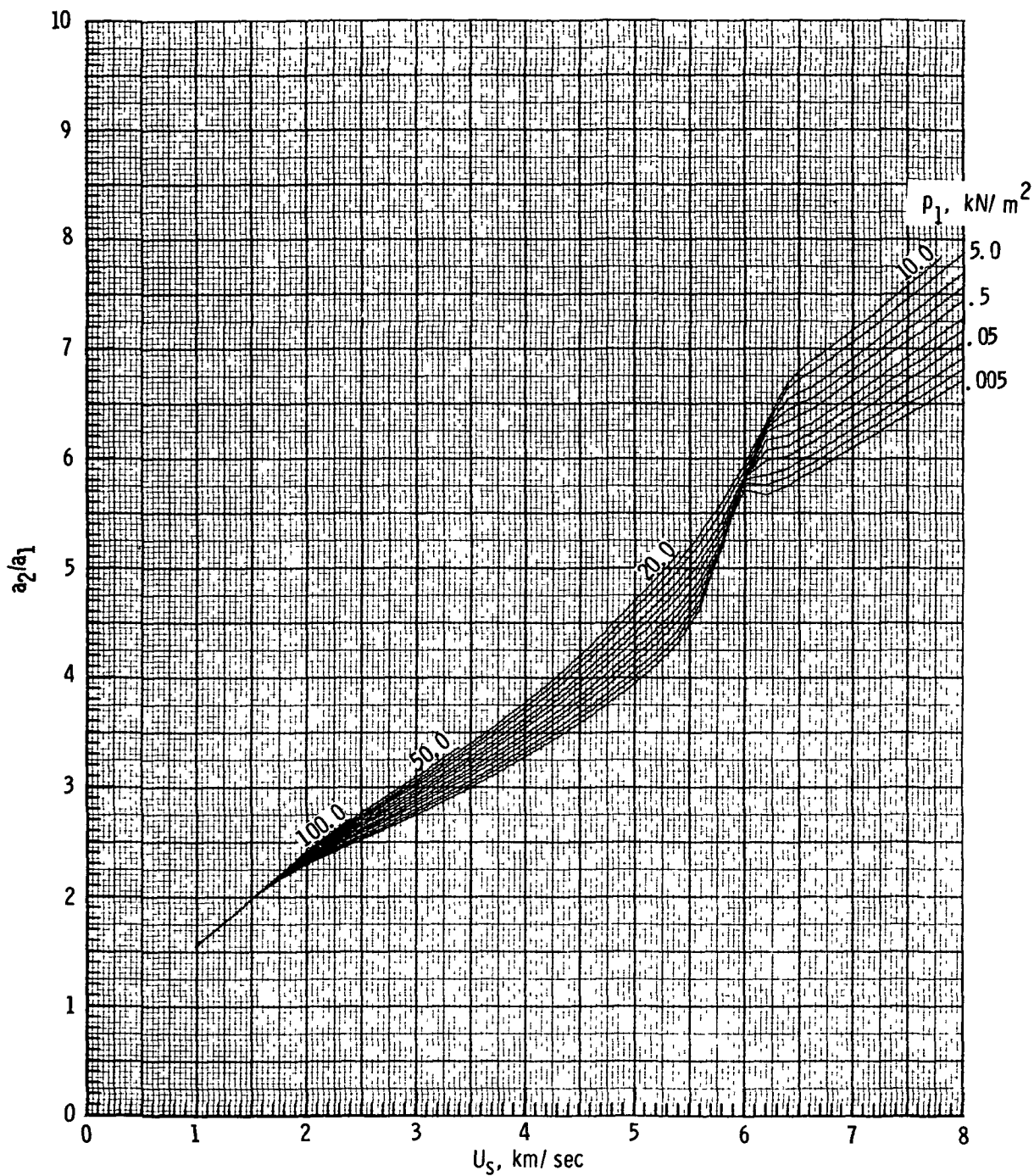


(d) Enthalpy, h_2/h_1 .
Figure 2.- Continued.

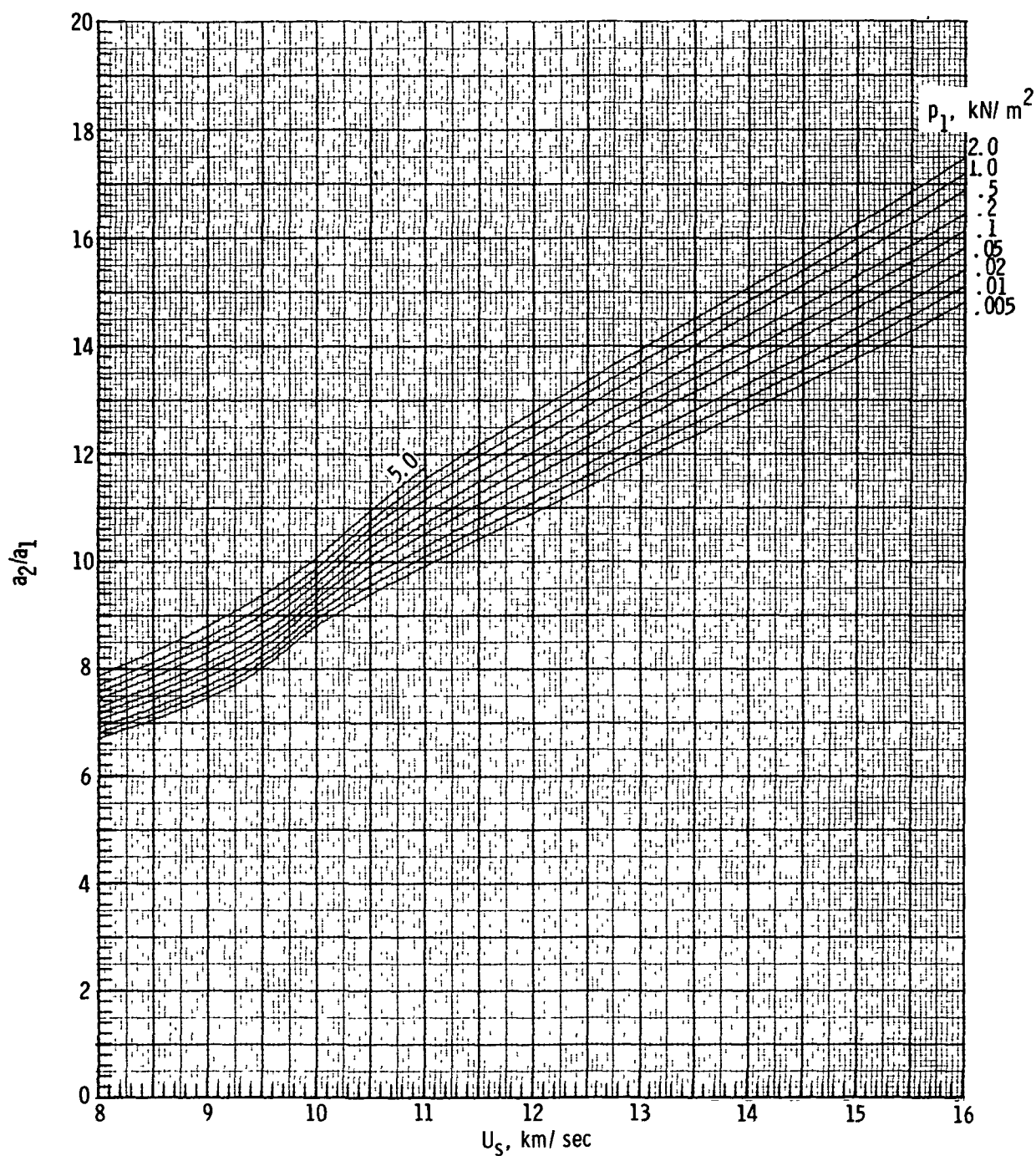


(d) Concluded.

Figure 2.- Continued.

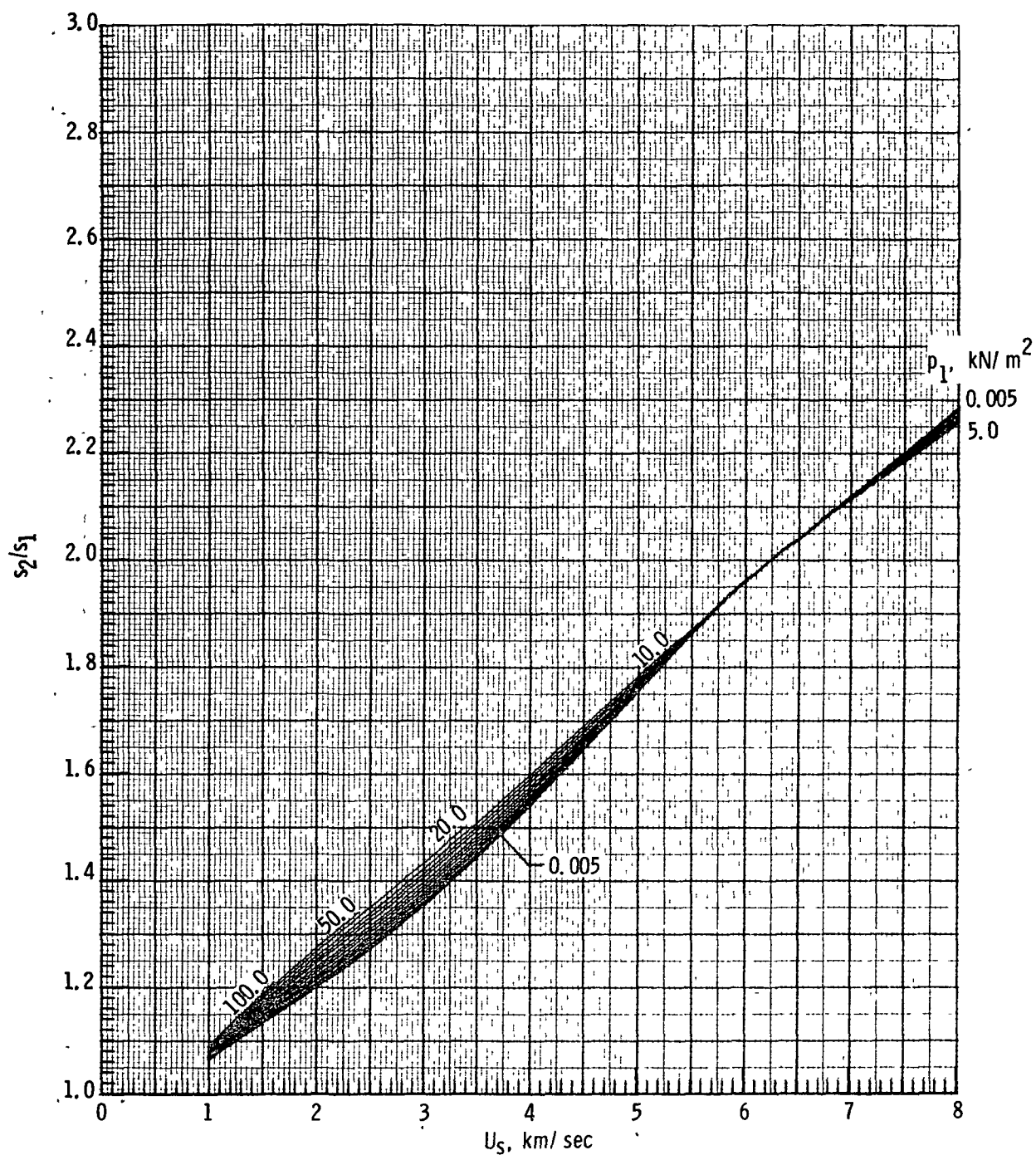


(e) Speed of sound, a_2/a_1 .
Figure 2.- Continued.

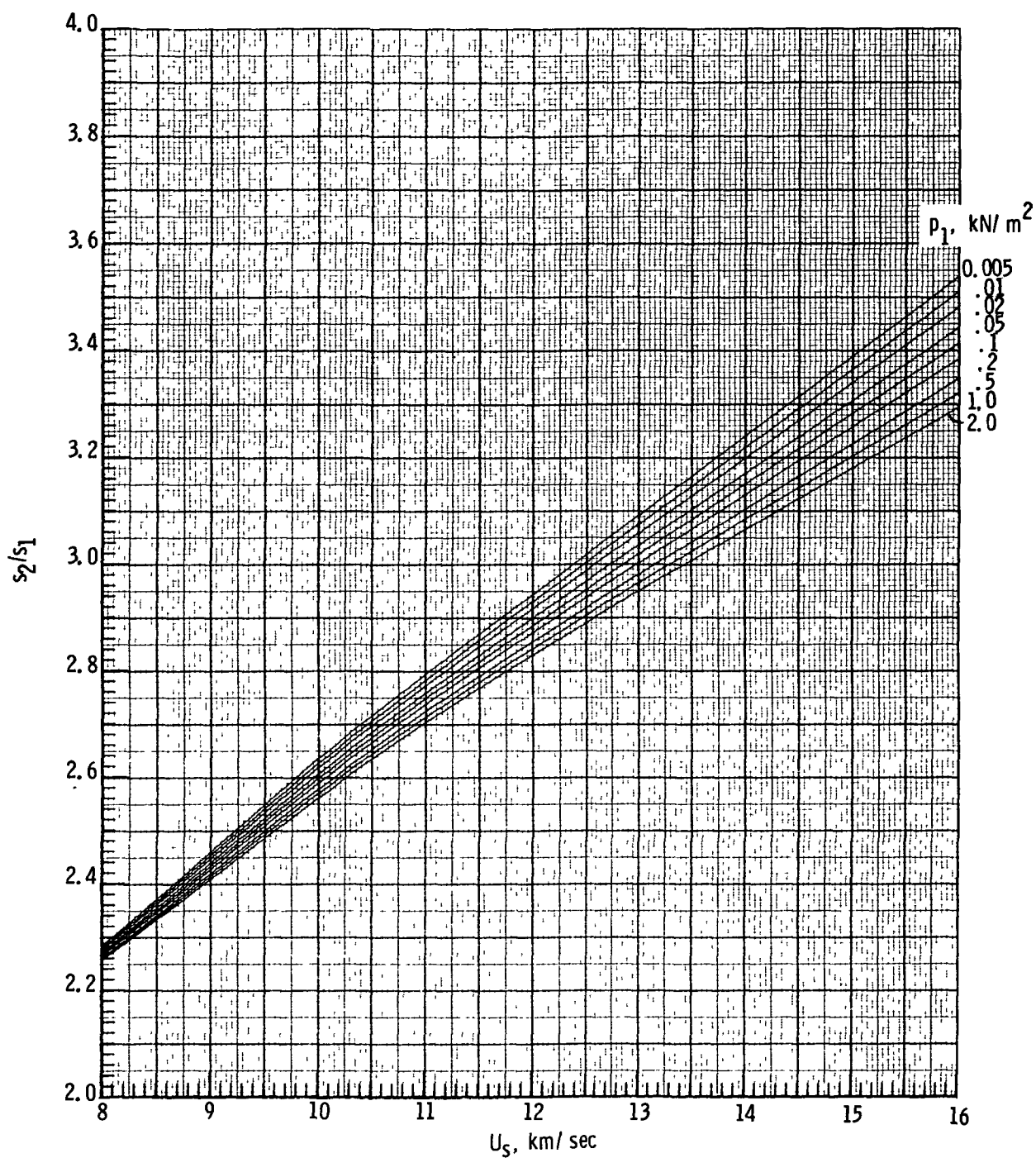


(e) Concluded.

Figure 2.- Continued.

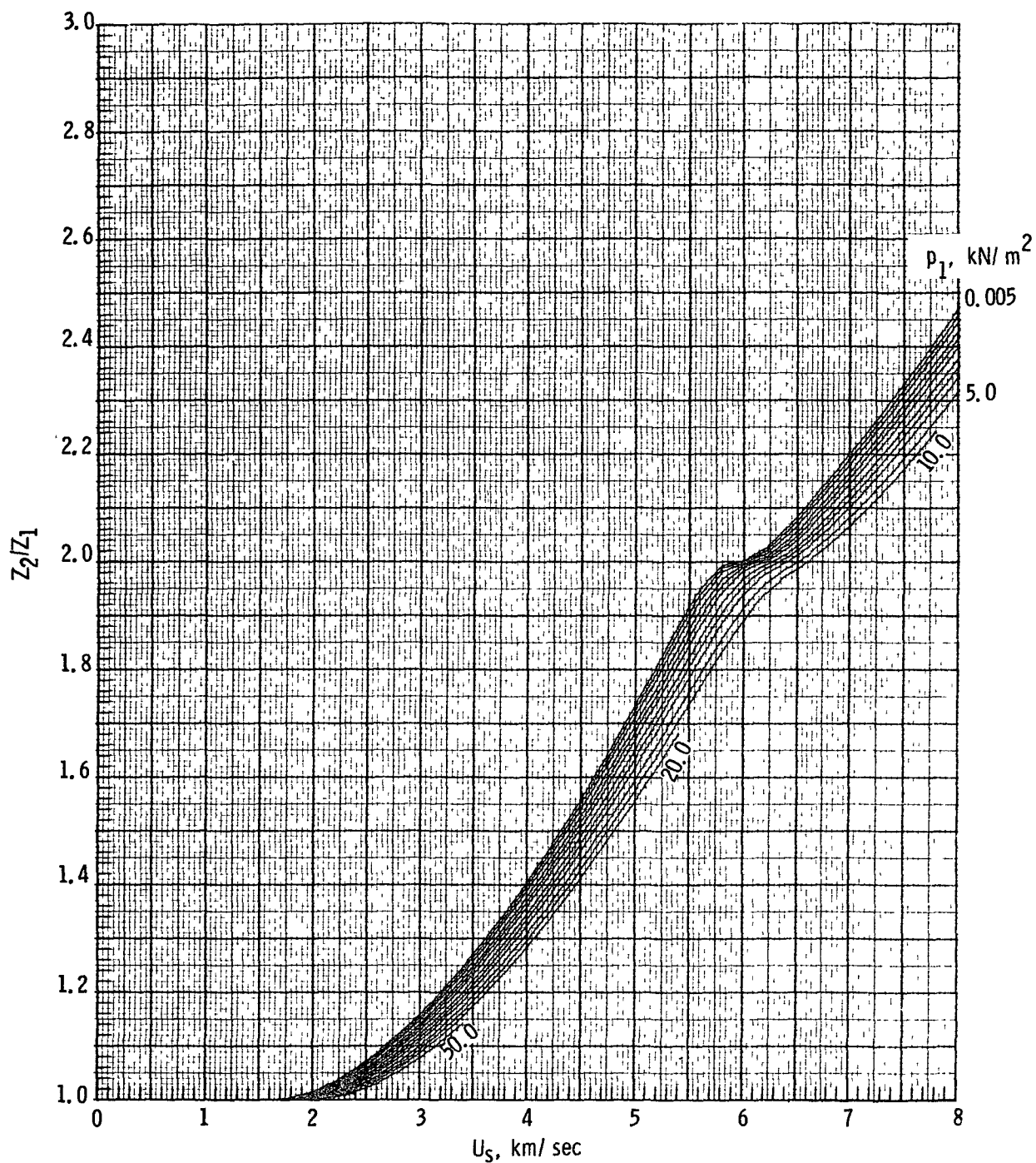


(f) Entropy, s_2/s_1 .
Figure 2.- Continued.

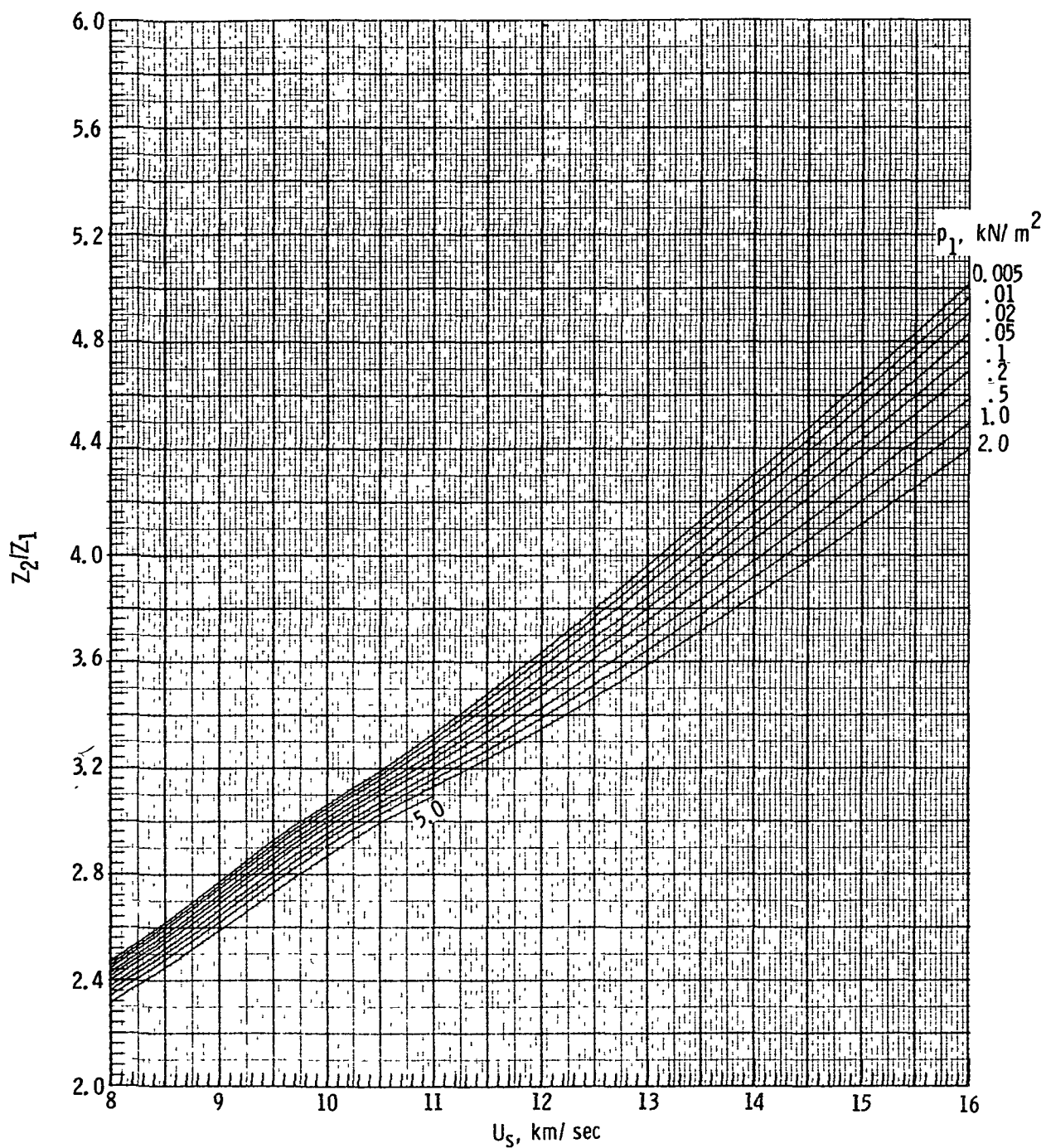


(f) Concluded.

Figure 2.- Continued.

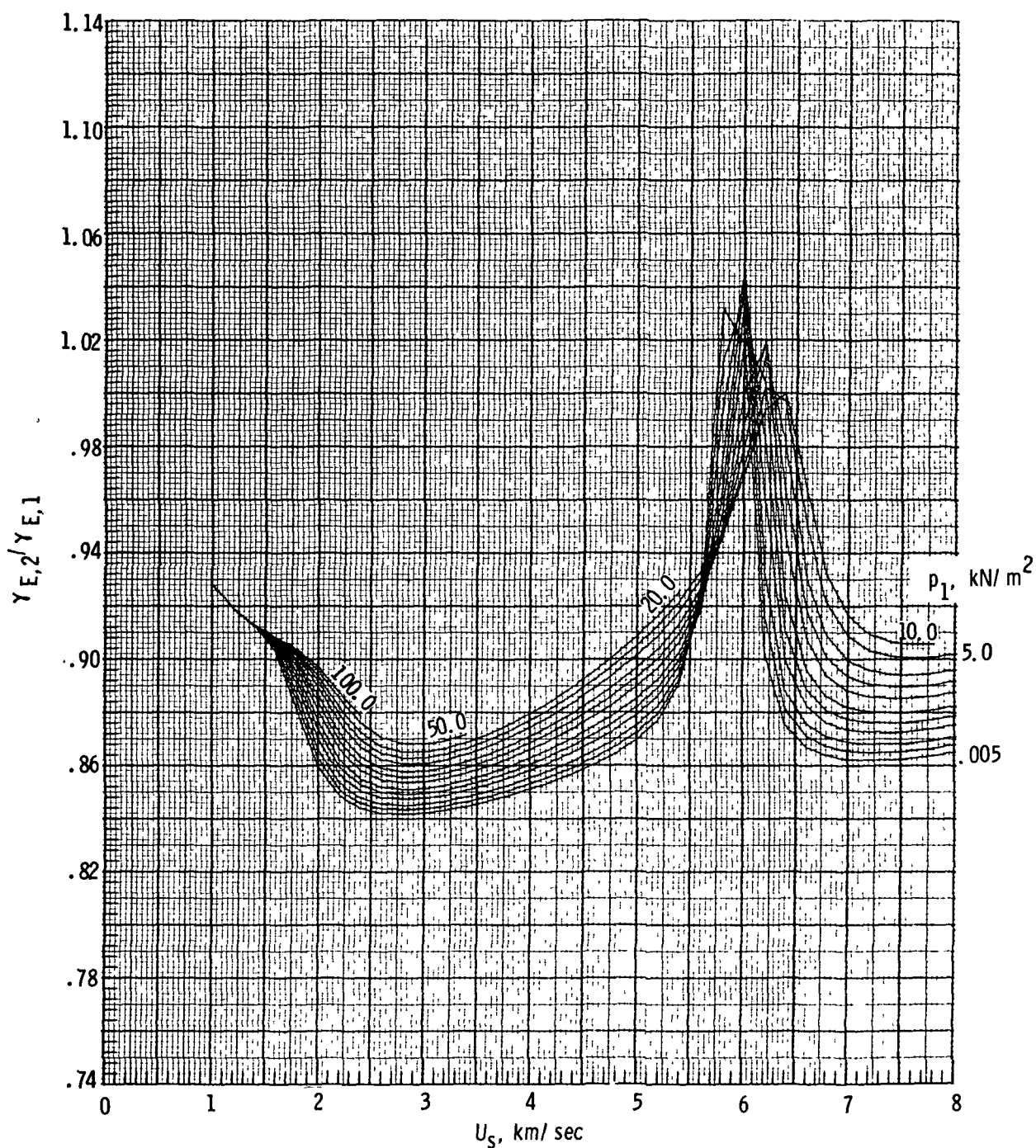


(g) Molecular weight ratio, Z_2/Z_1 .
Figure 2.- Continued.

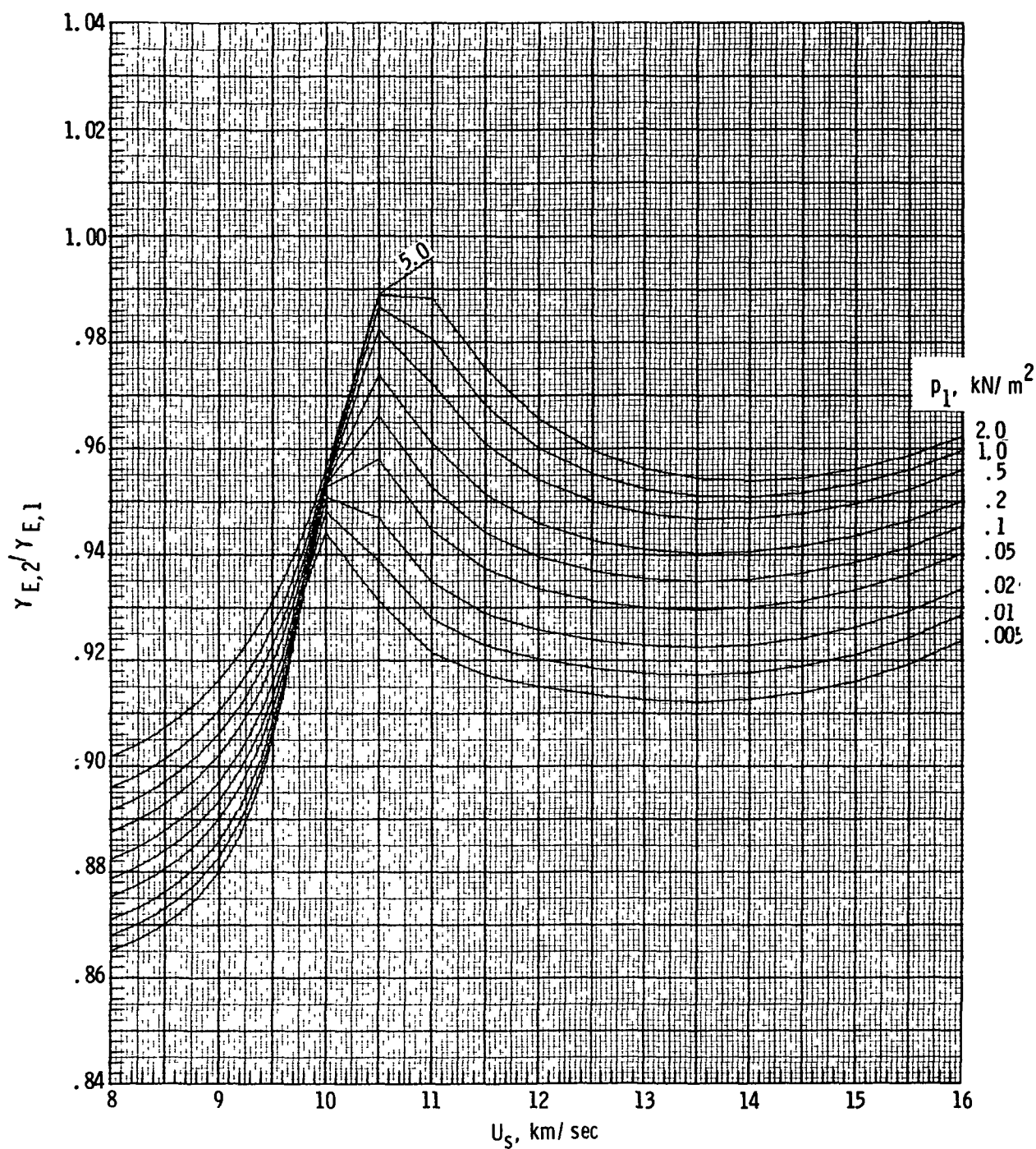


(g) Concluded.

Figure 2.- Continued.

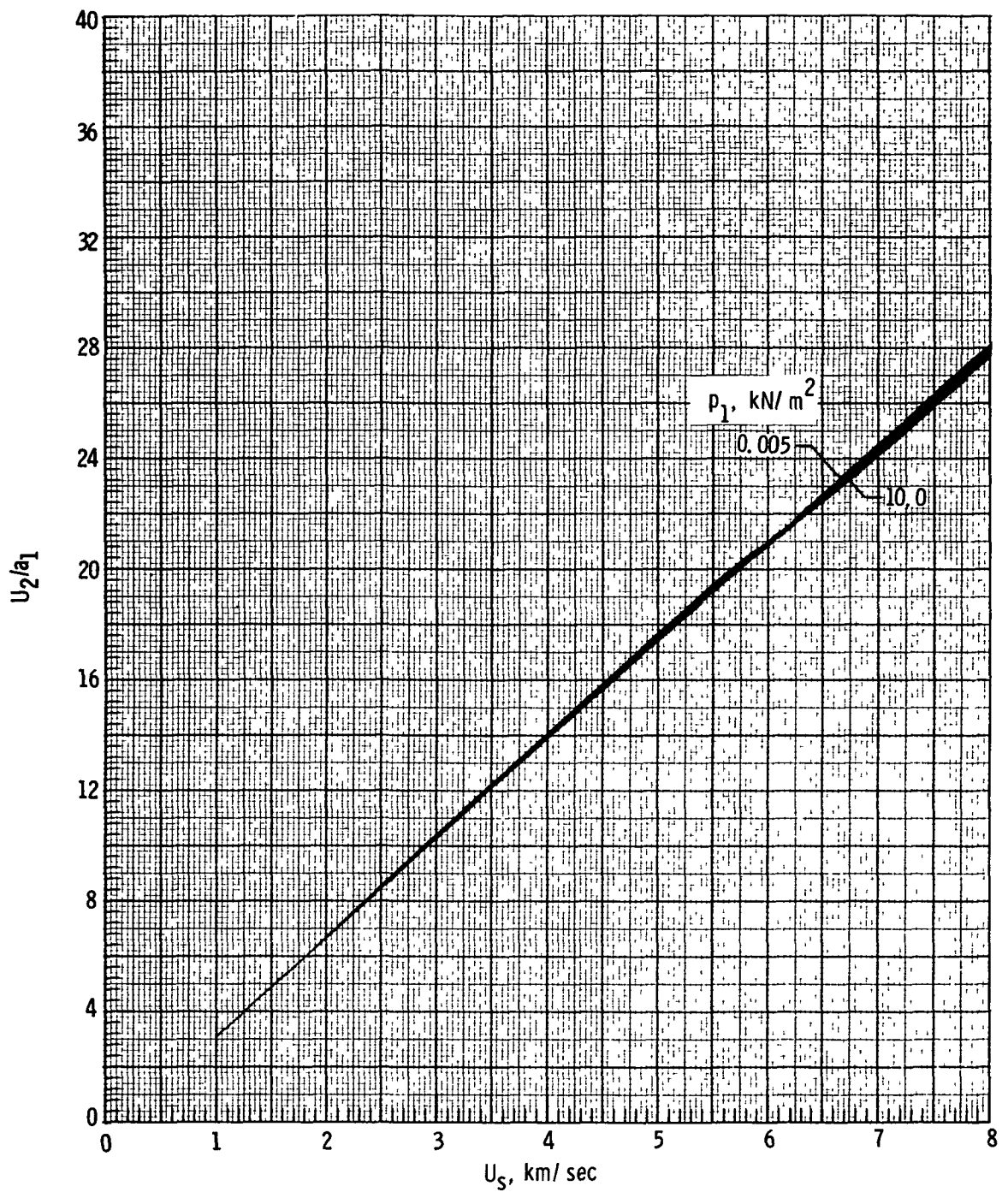


(h) Isentropic exponent, $\gamma_{E,2}/\gamma_{E,1}$.
Figure 2.- Continued.

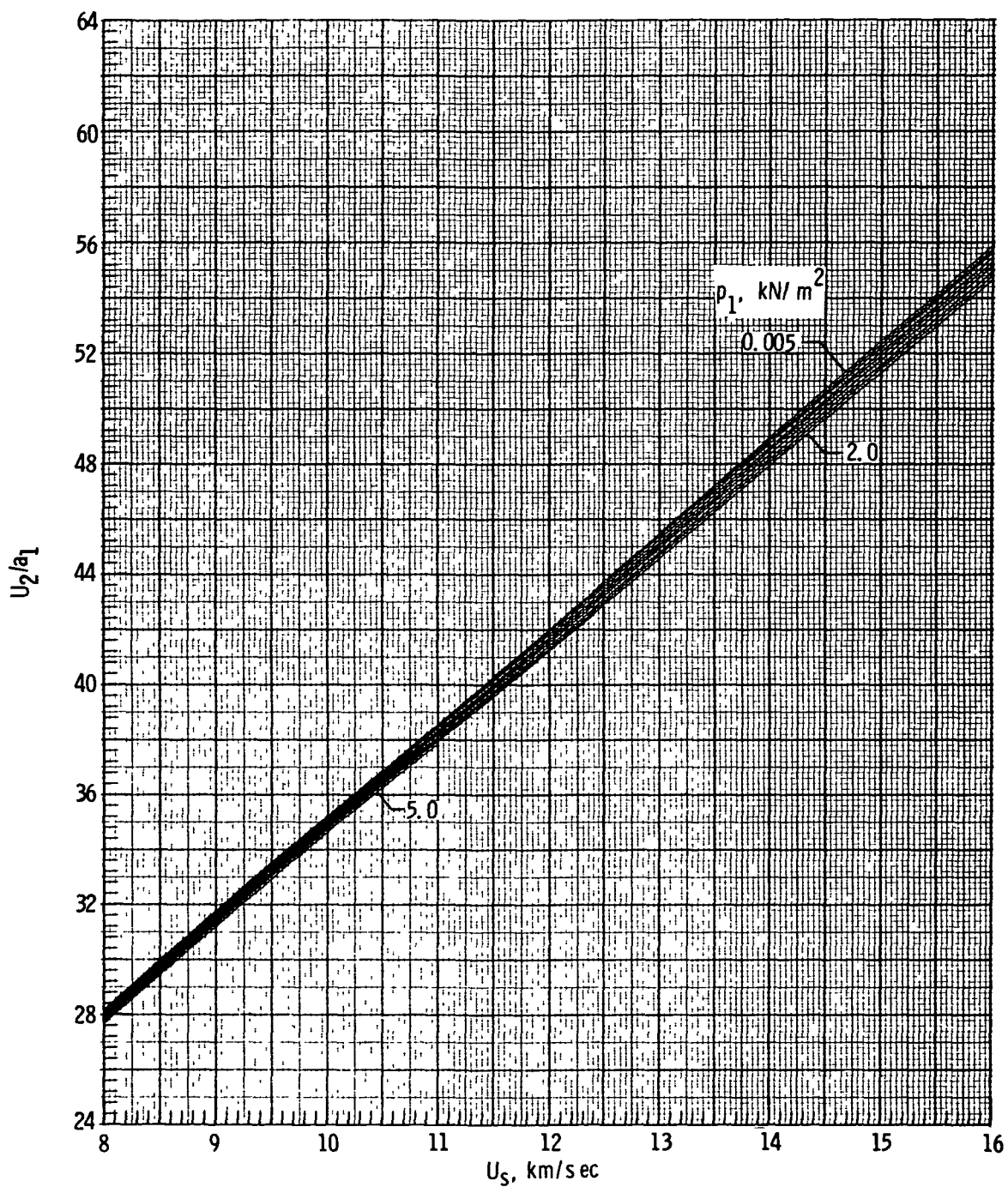


(h) Concluded.

Figure 2.- Continued.

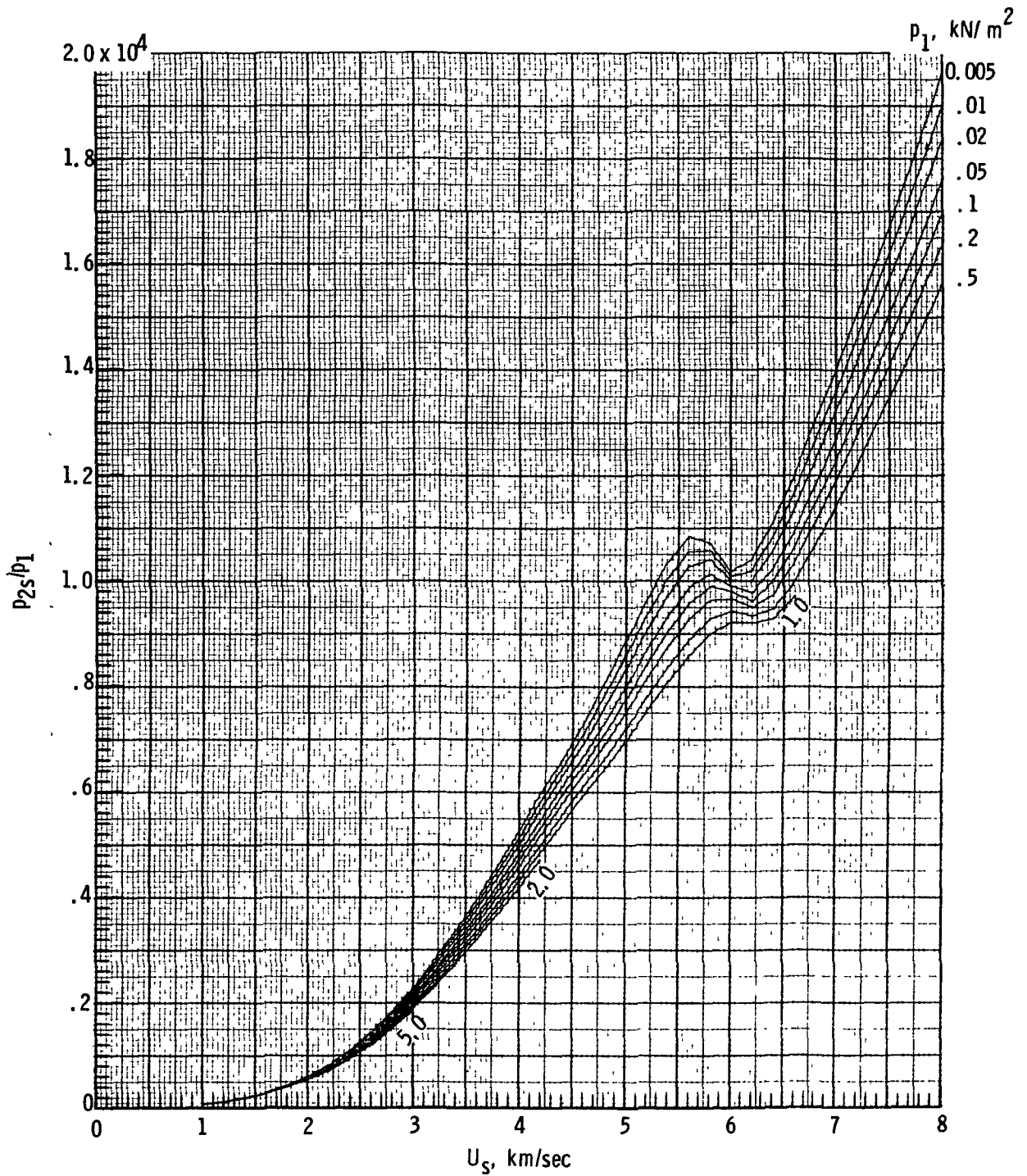


(i) Velocity, U_2/a_1 .
Figure 2.- Continued.



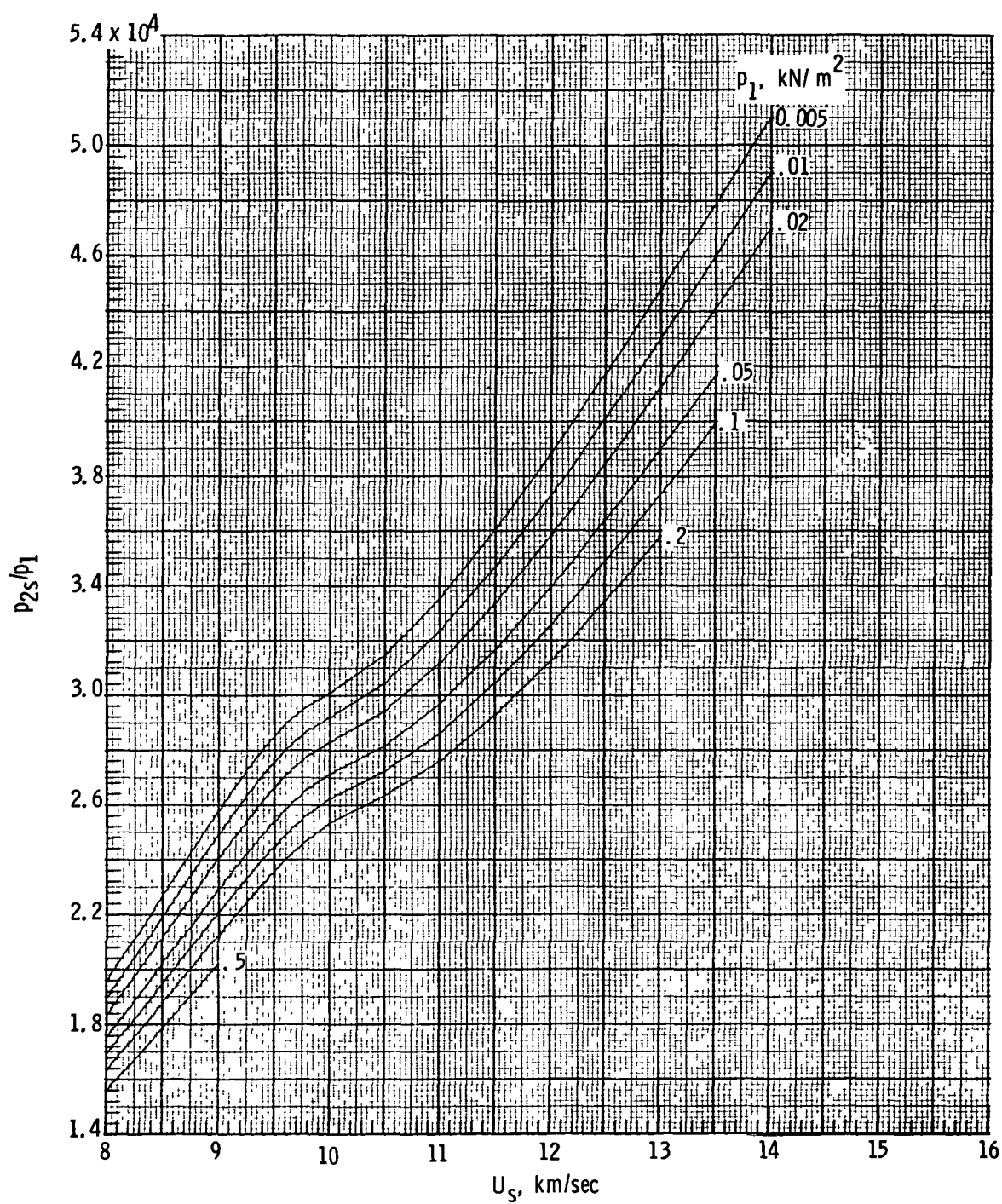
(i) Concluded.

Figure 2.- Concluded.



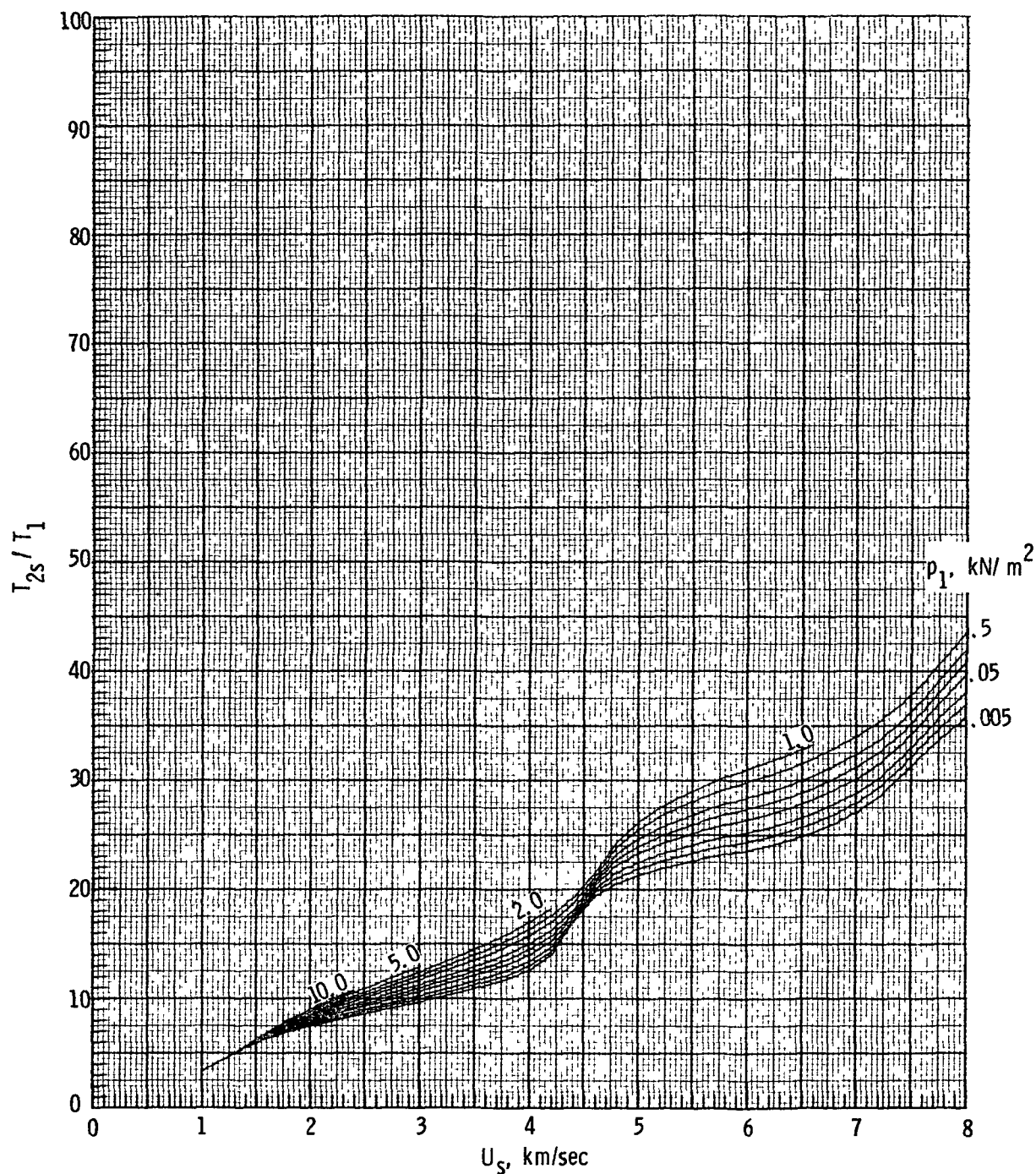
(a) Pressure, p_{2s}/p_1 .

Figure 3.- Thermodynamic properties and flow velocity behind a standing normal shock for pure CO_2 .

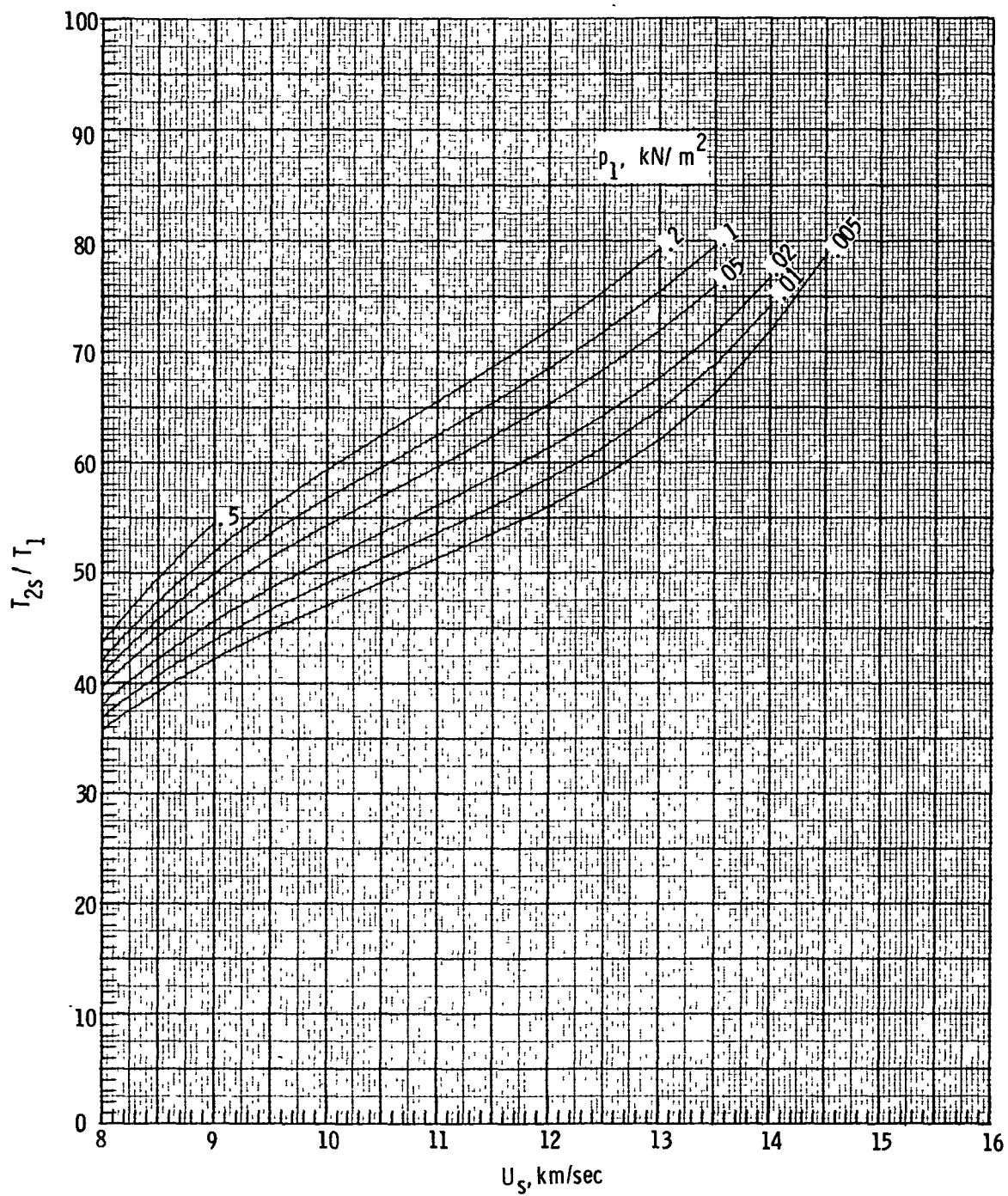


(a) Concluded.

Figure 3.- Continued.

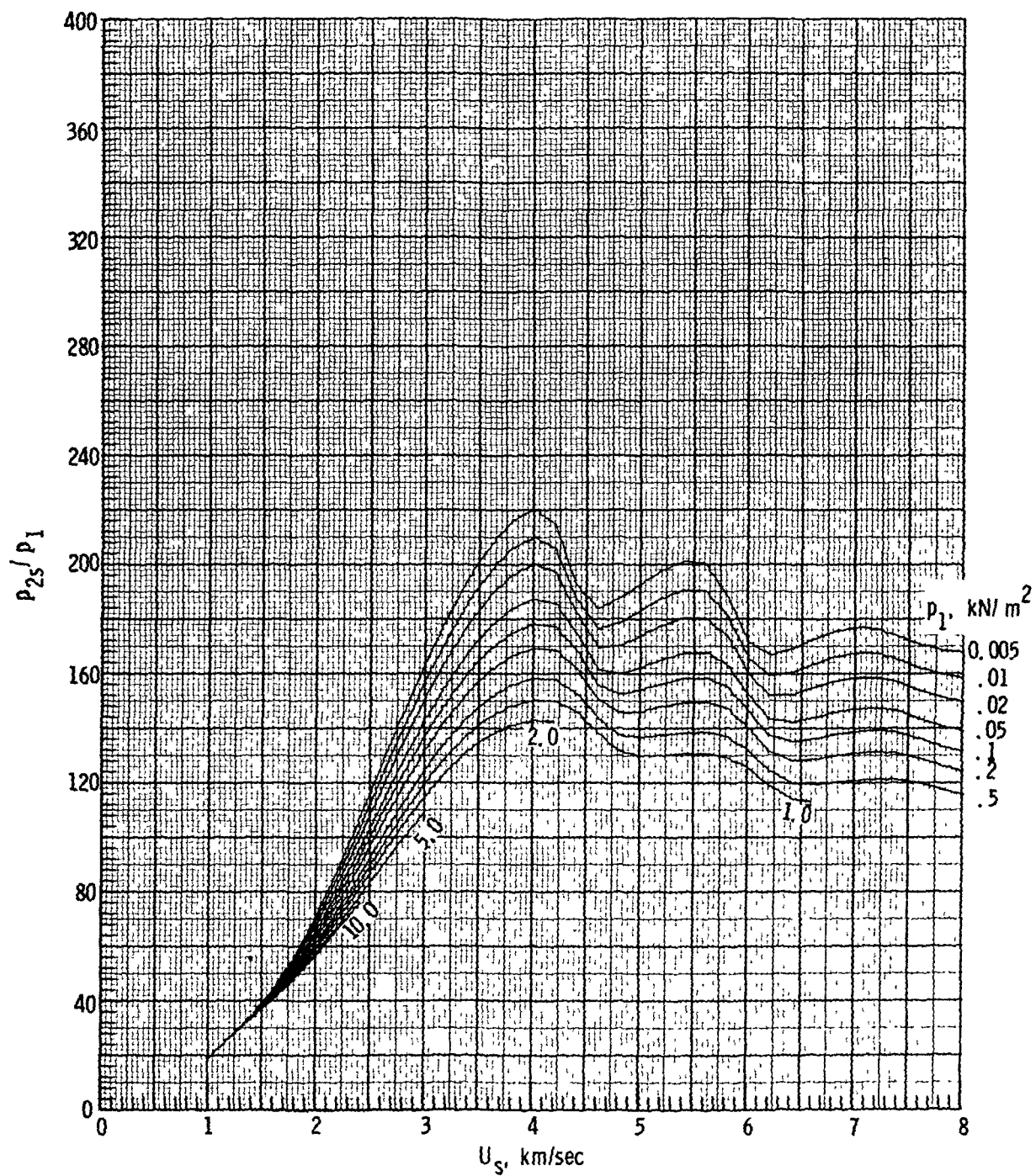


(b) Temperature, T_{2s}/T_1 .
Figure 3.- Continued.



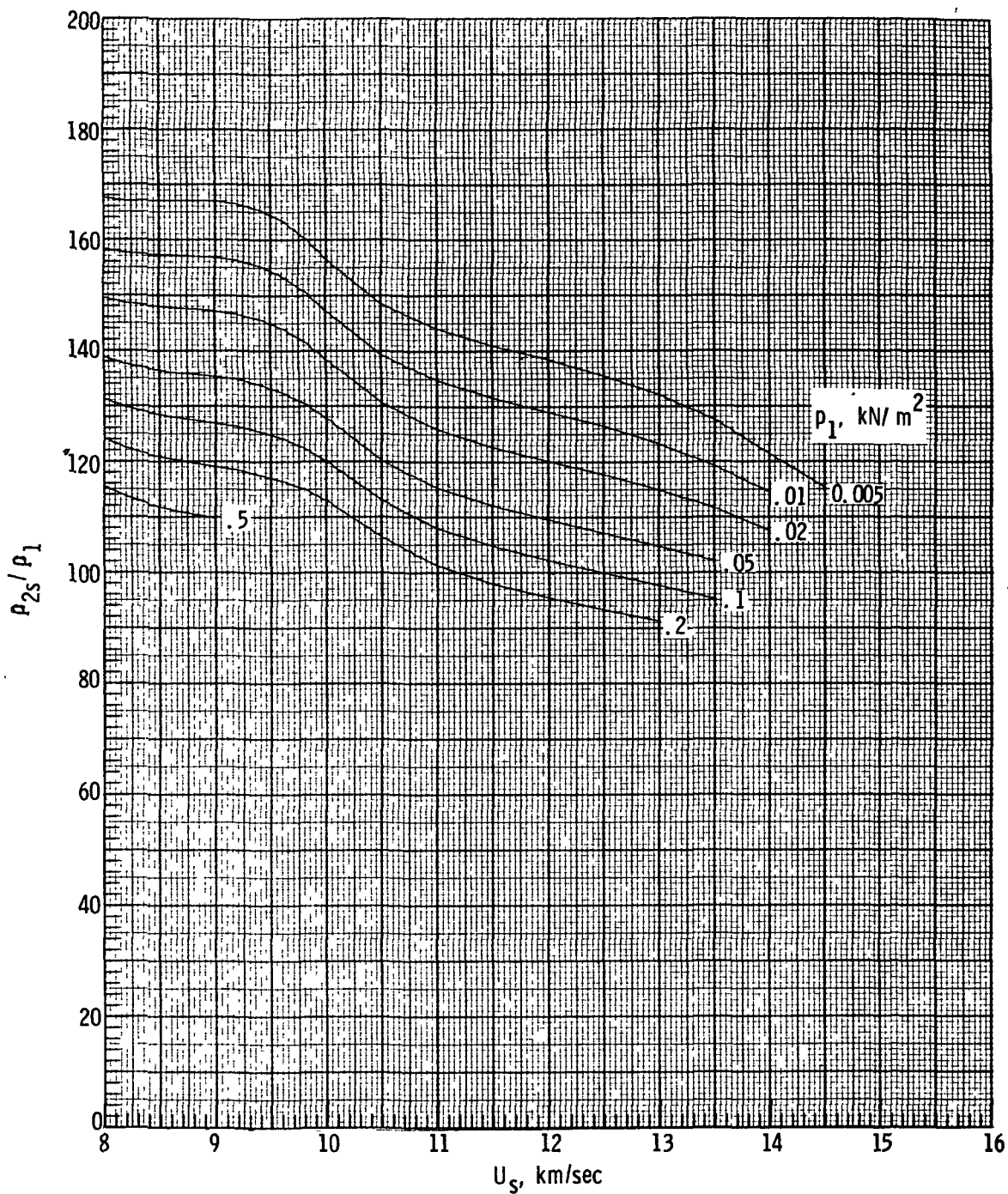
(b) Concluded.

Figure 3.- Continued.



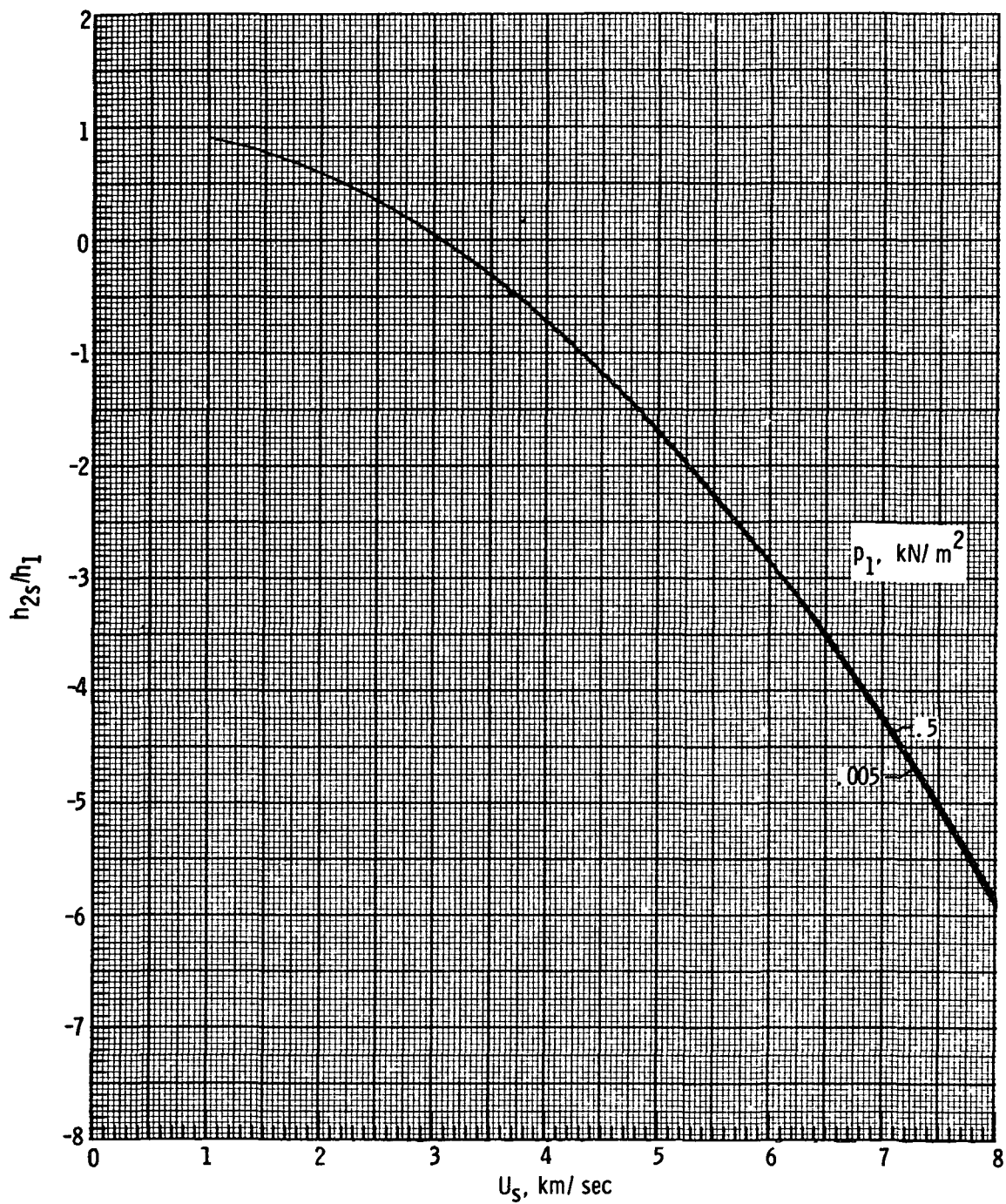
(c) Density ratio, p_{2s}/p_1 .

Figure 3.- Continued.

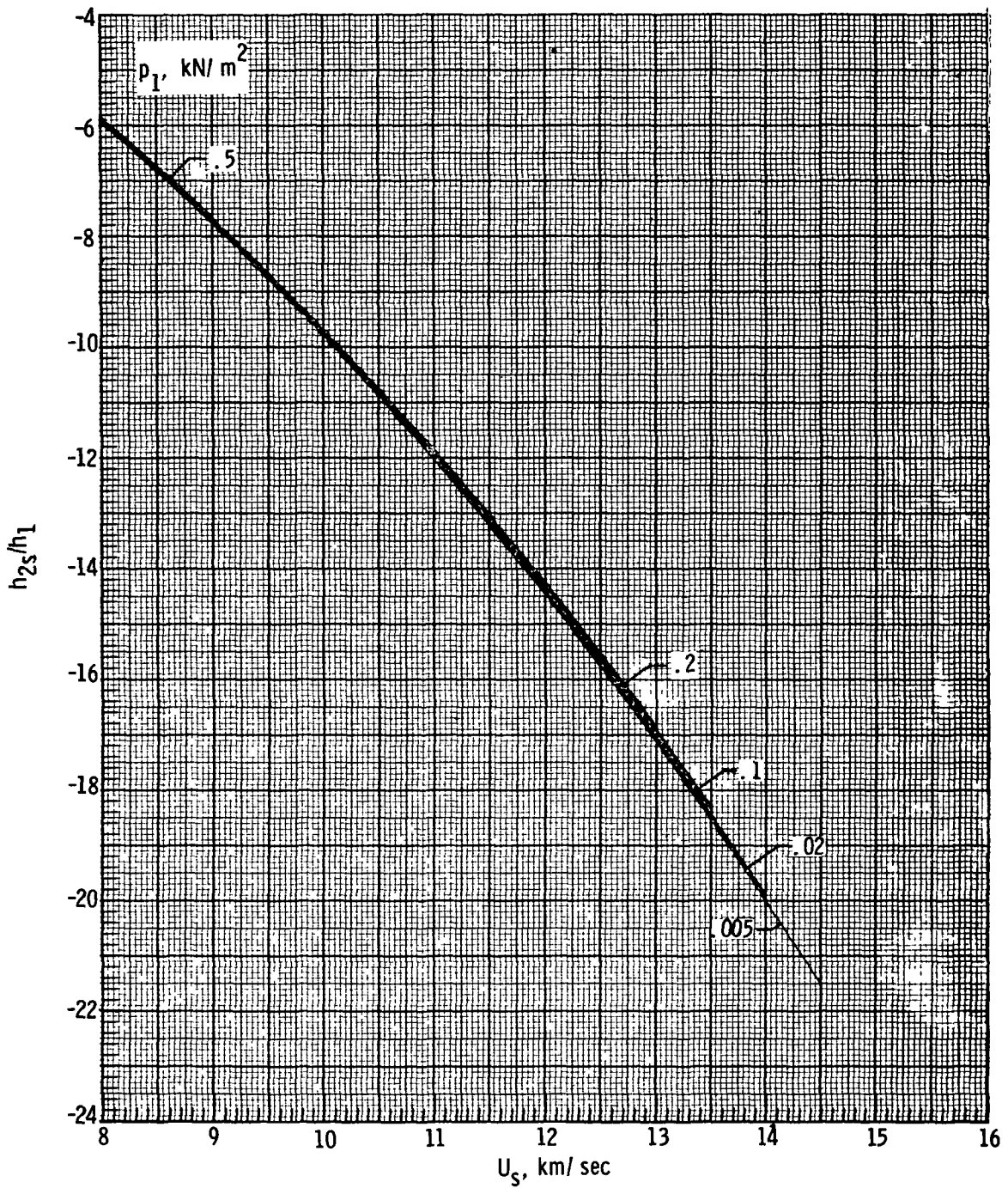


(c) Concluded.

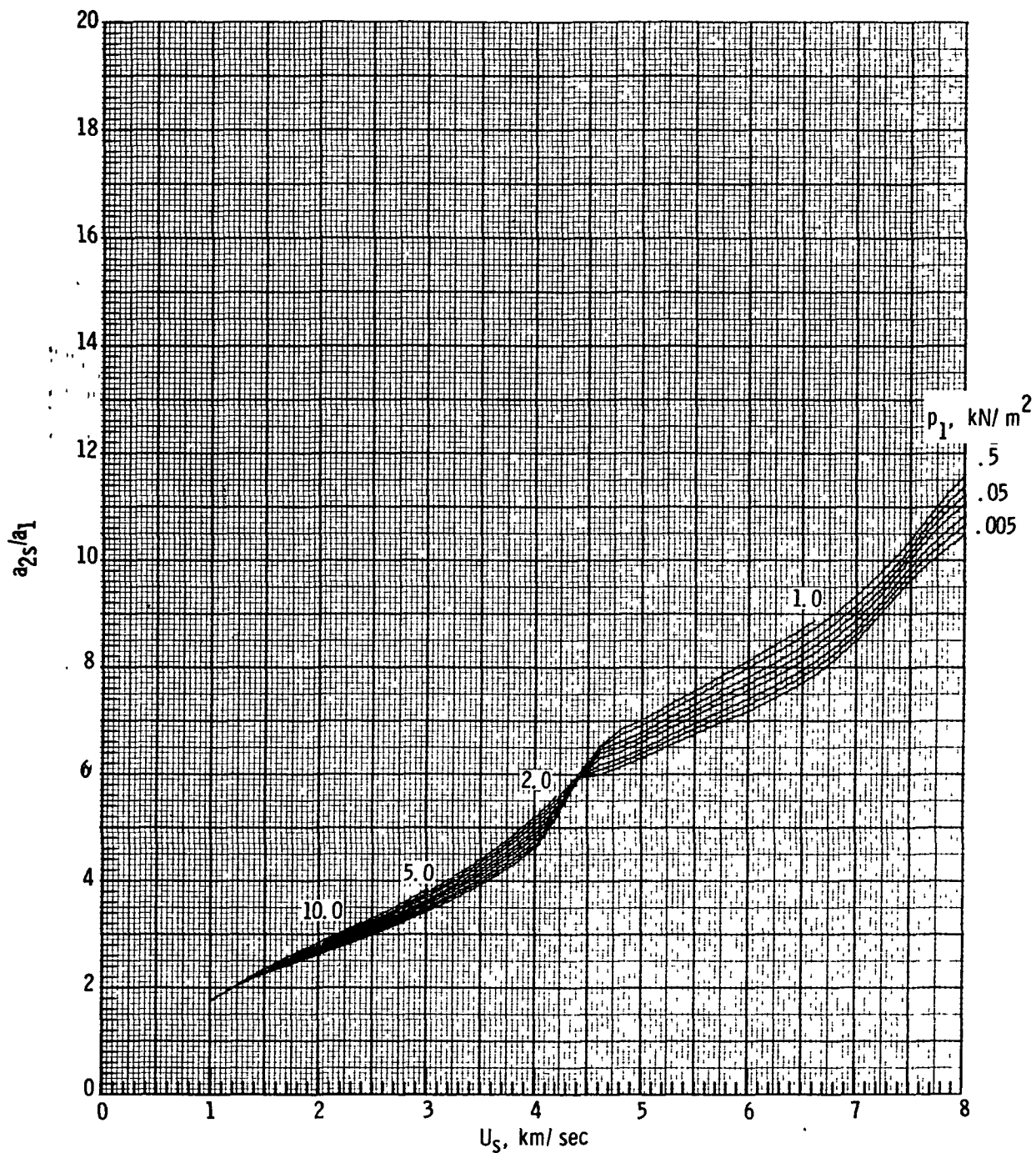
Figure 3.- Continued.



(d) Enthalpy, h_{2s}/h_1 .
Figure 3.- Continued.

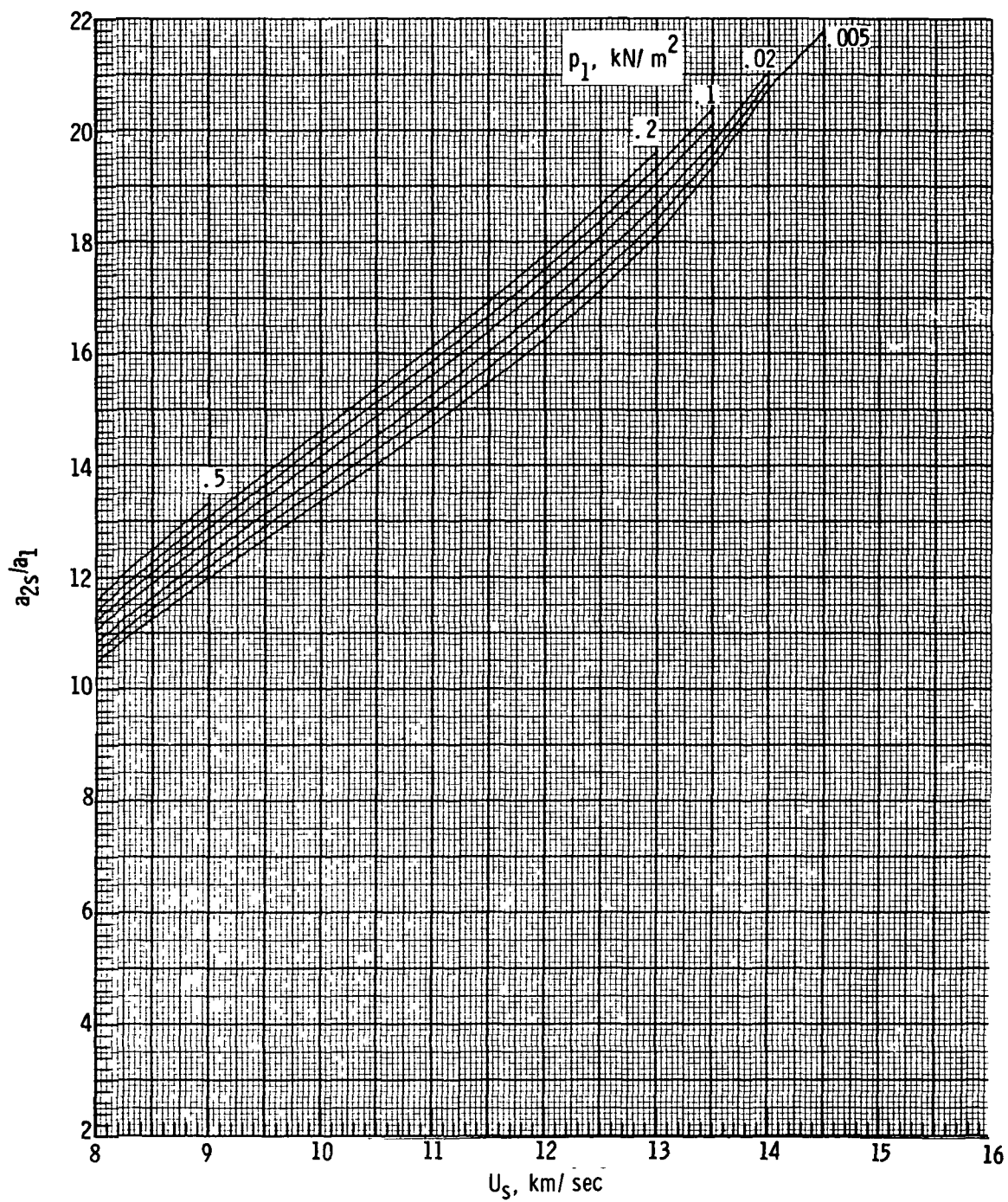


(d) Concluded.
Figure 3.- Continued.



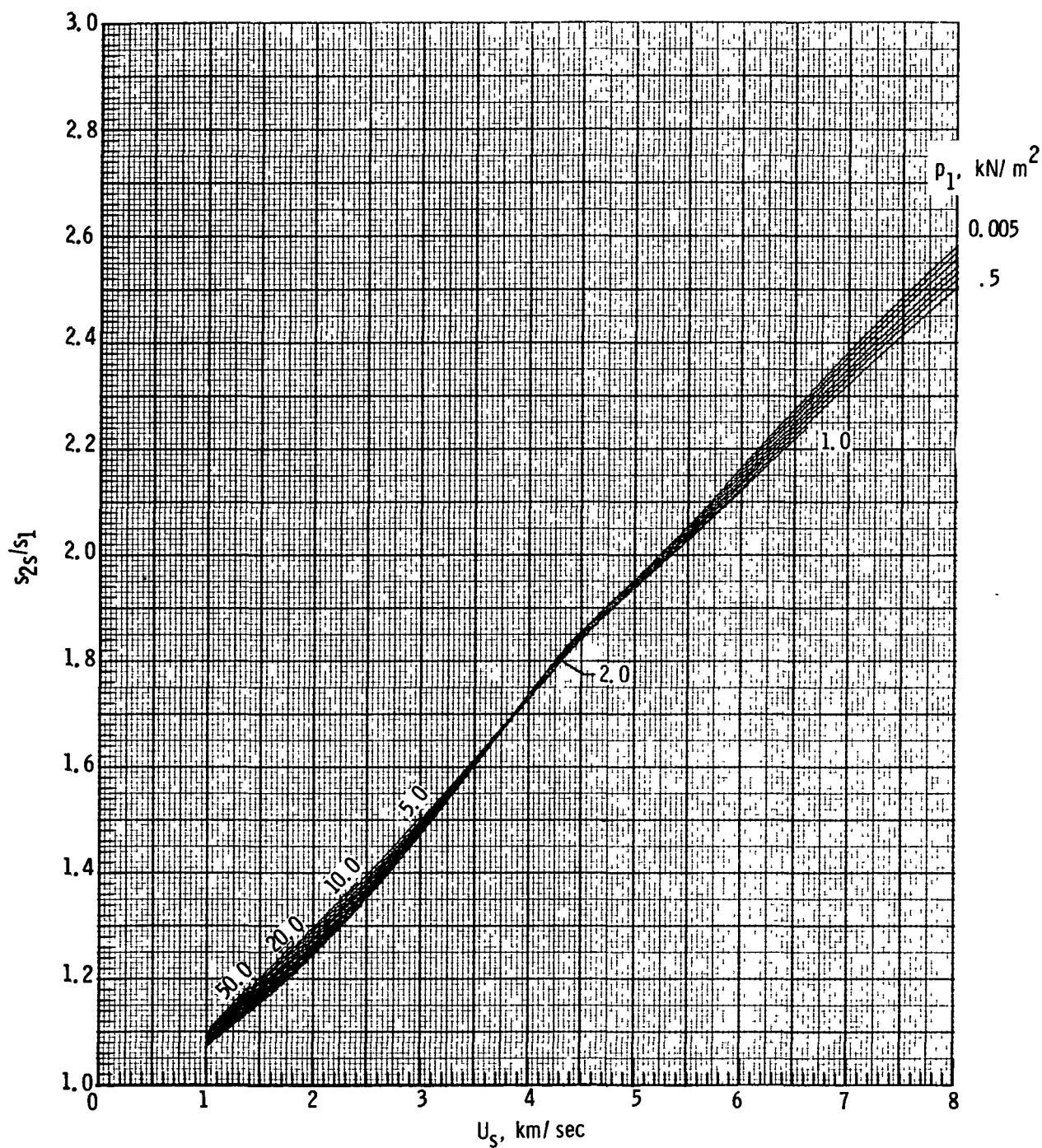
(e) Speed of sound, a_{2s}/a_1 .

Figure 3.- Continued.



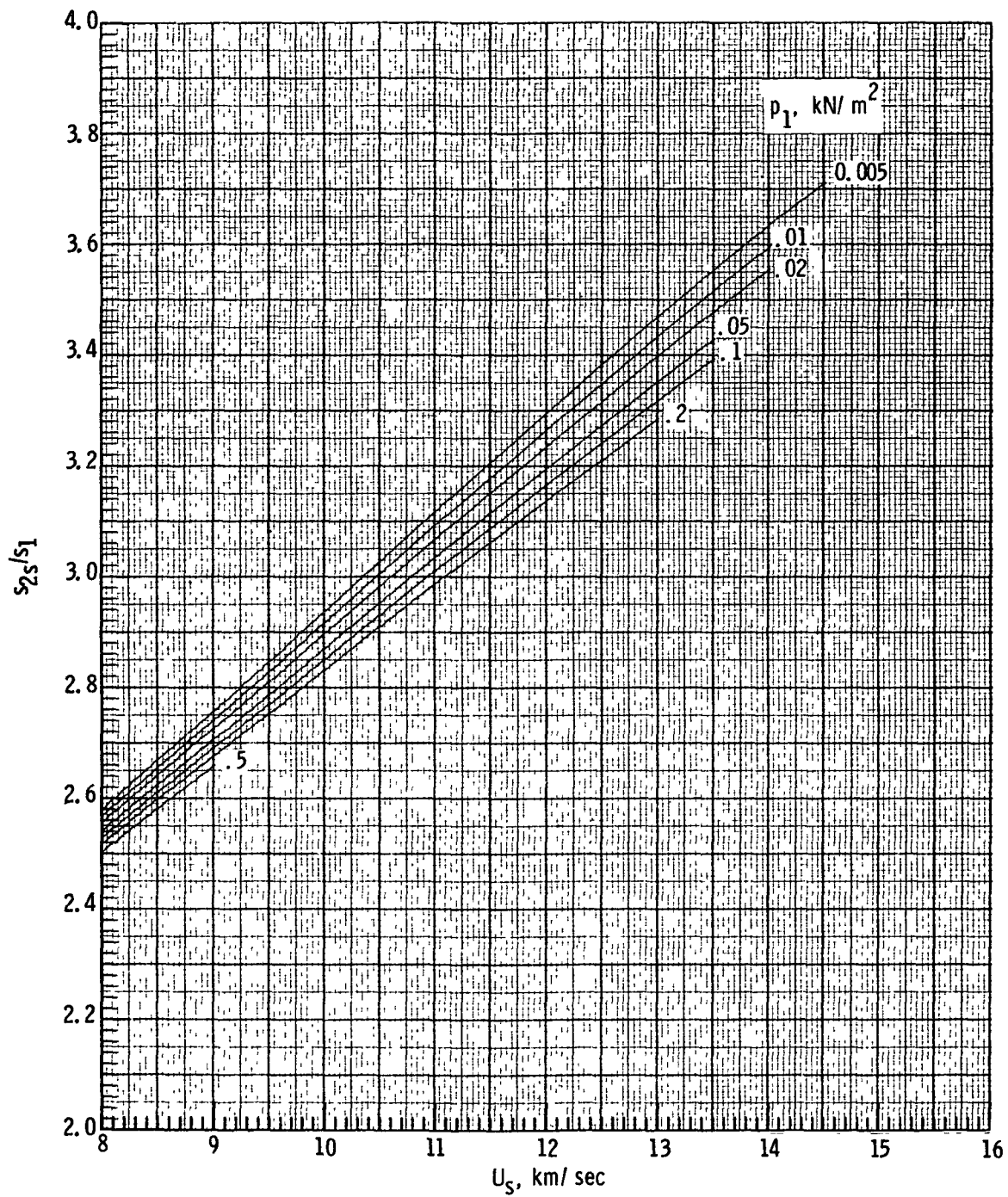
(e) Concluded.

Figure 3.- Continued.

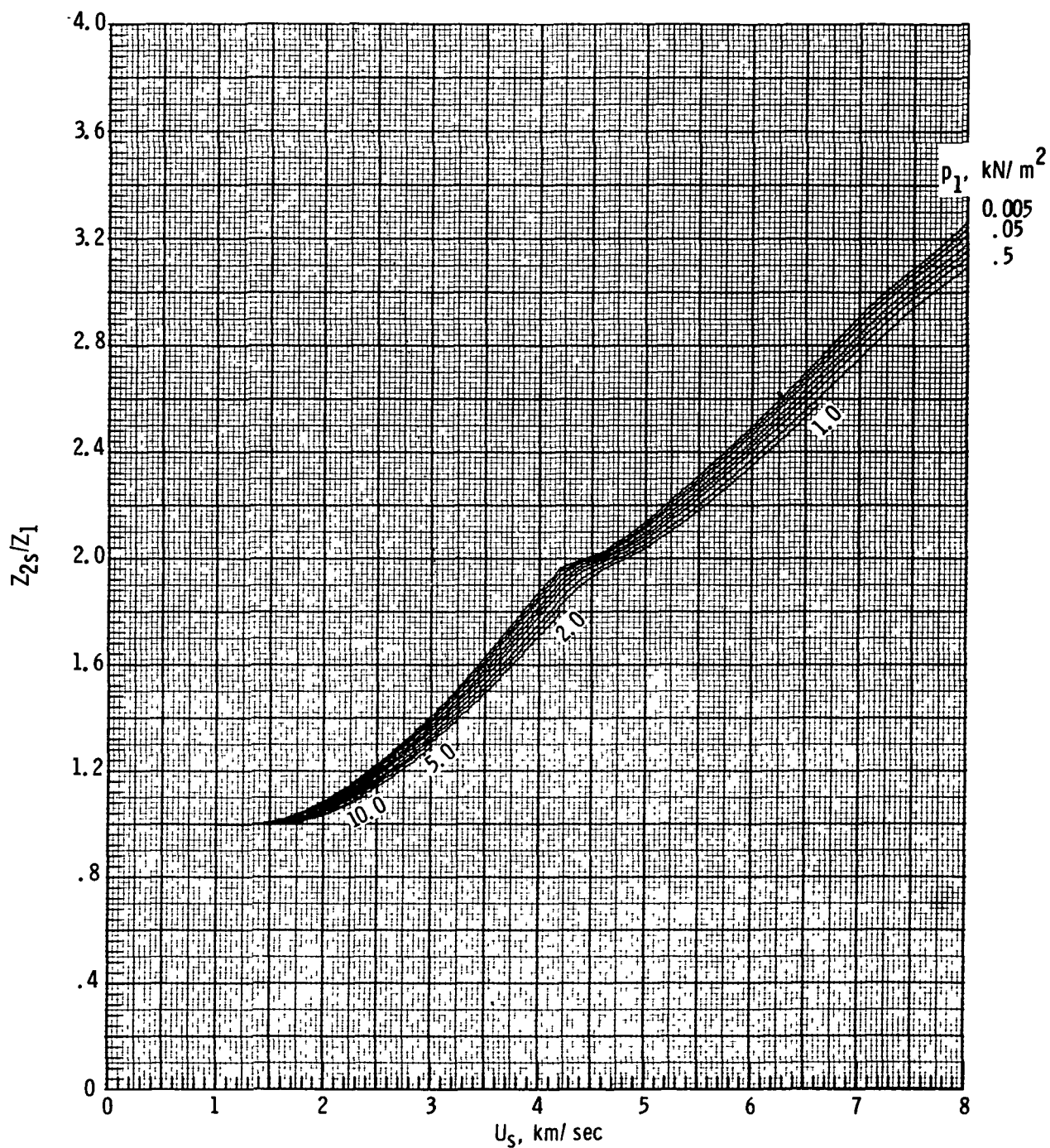


(f) Entropy, s_{2s}/s_1 .

Figure 3.- Continued.

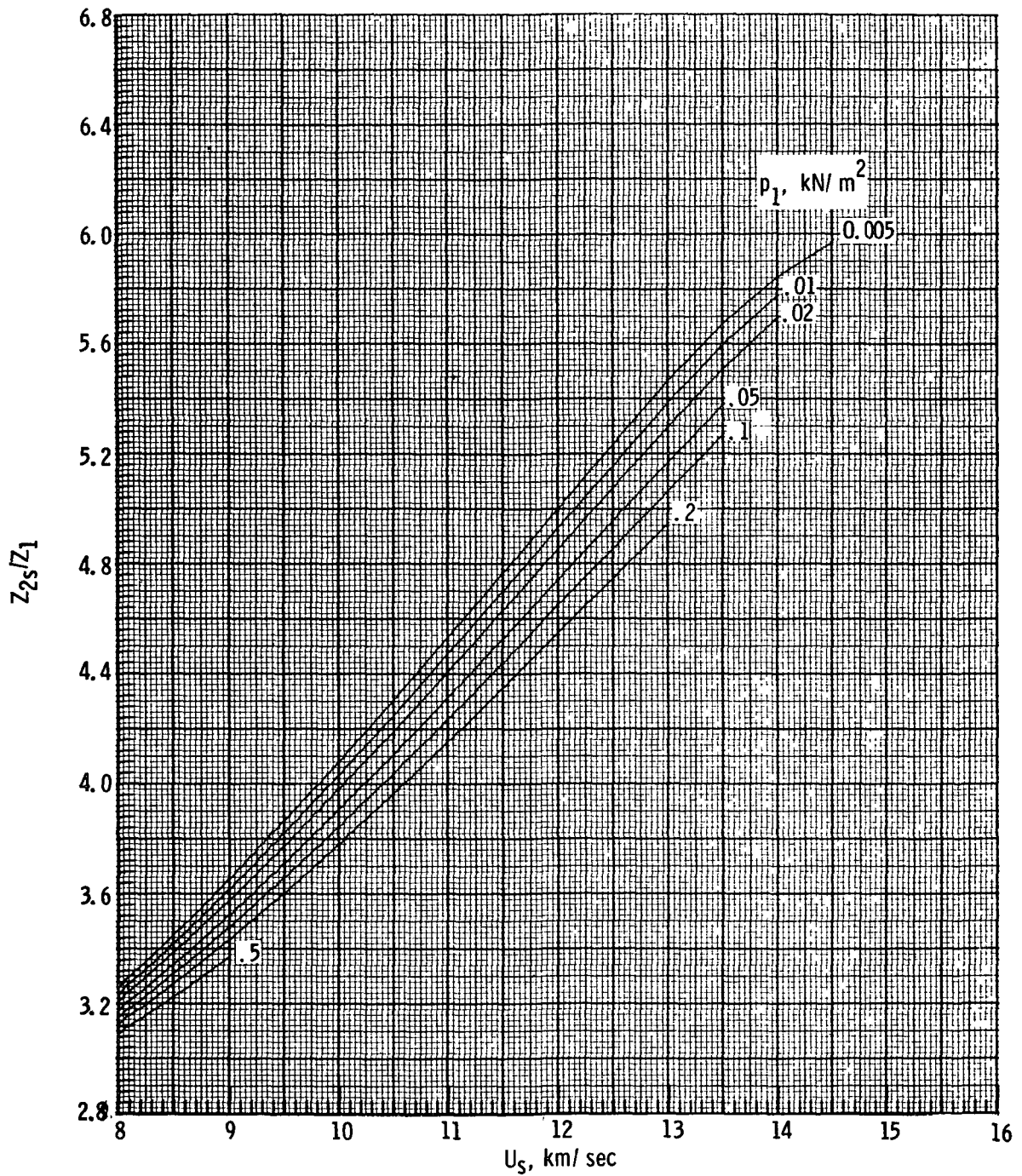


(f) Concluded.
Figure 3.- Continued.

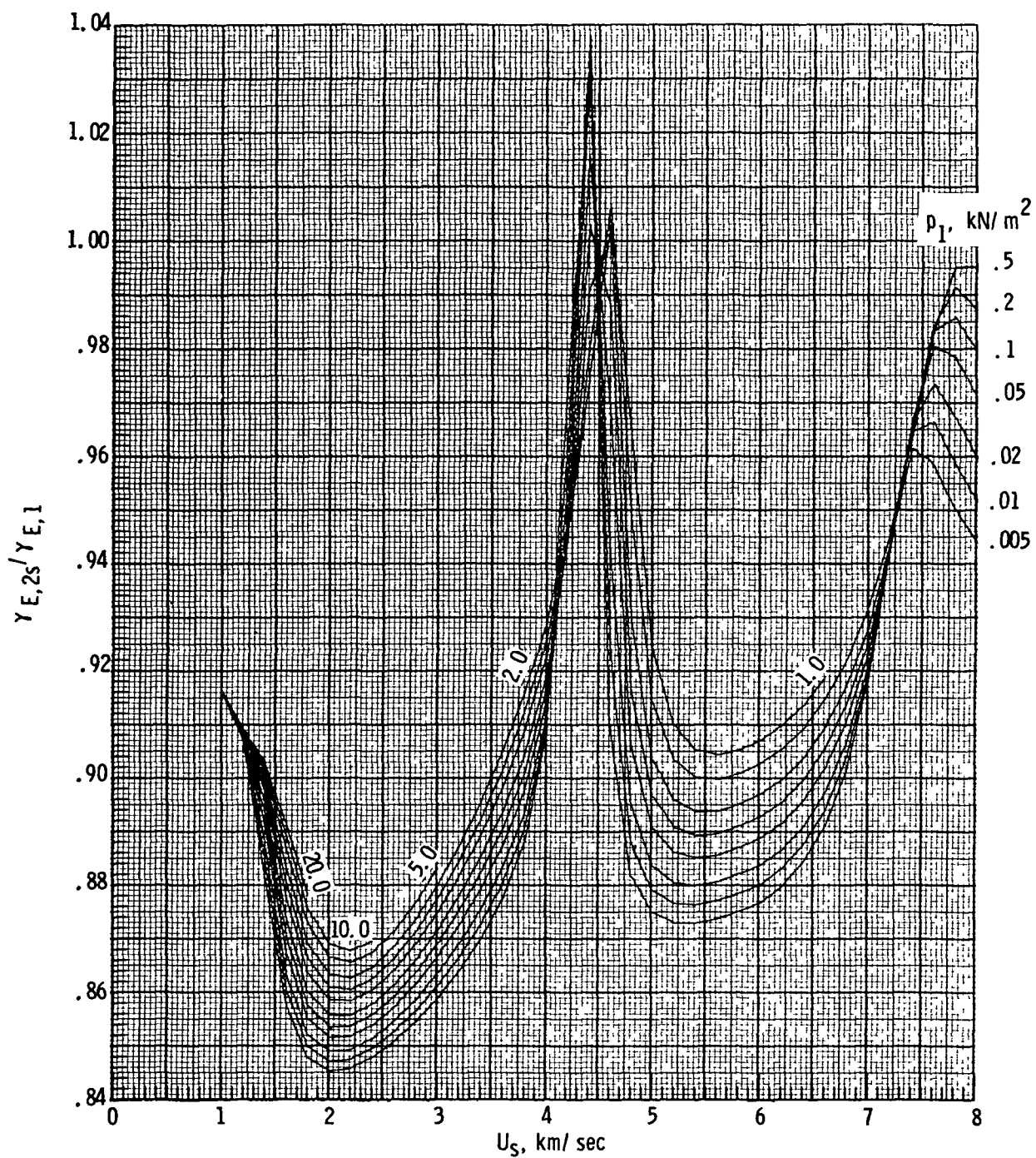


(g) Molecular weight ratio, Z_{2s}/Z_1 .

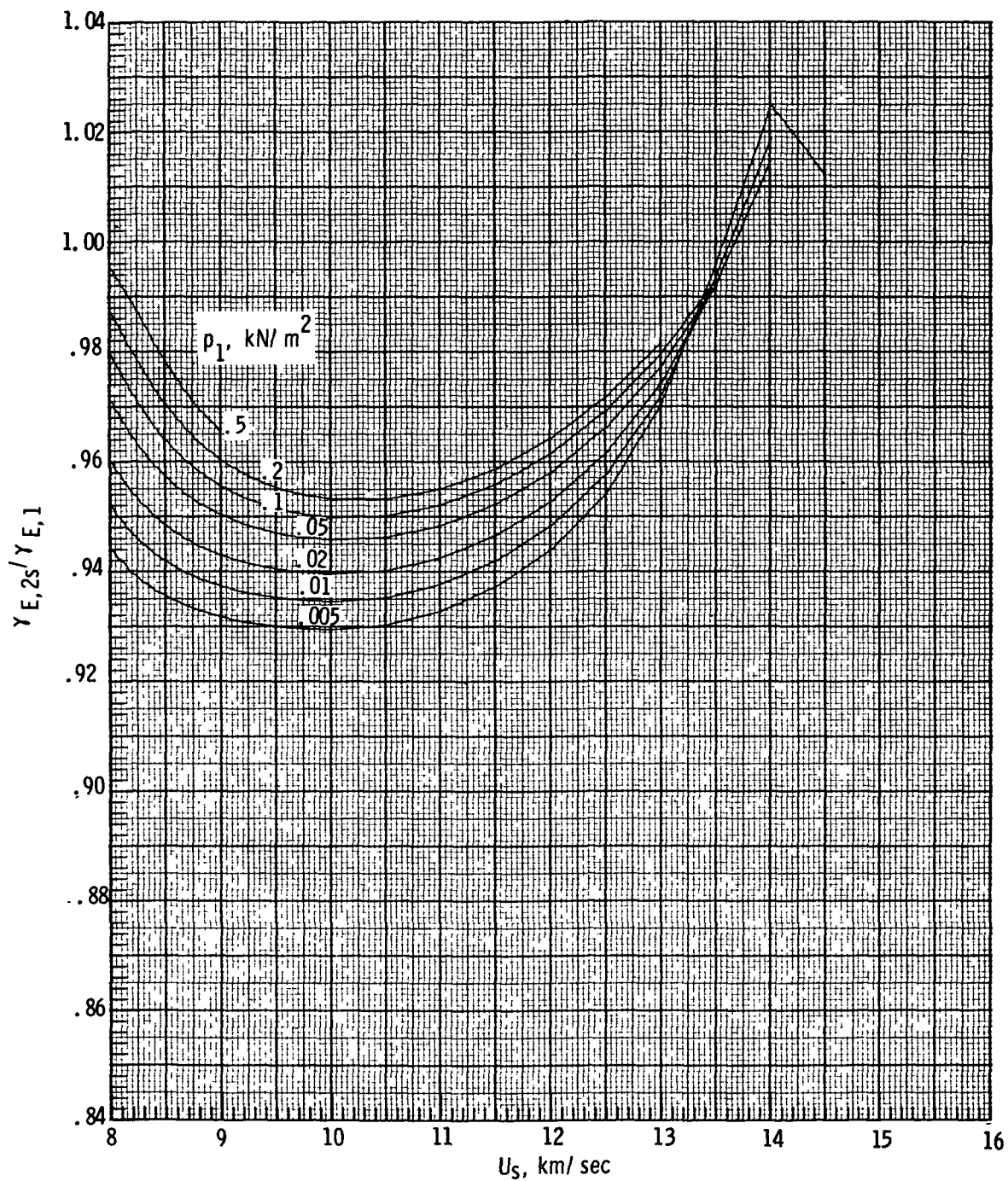
Figure 3.- Continued.



(g) Concluded.
Figure 3.- Continued.

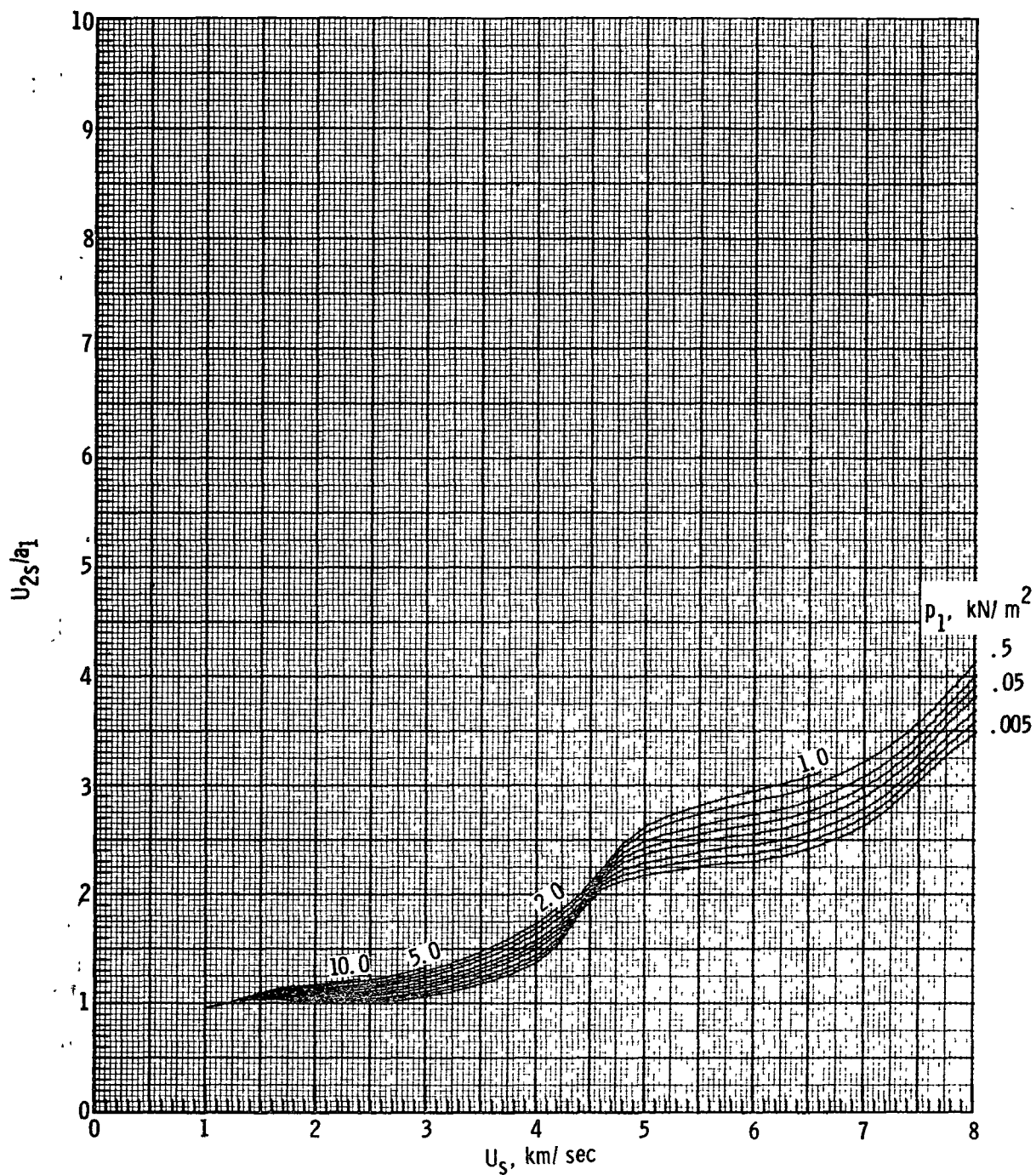


(h) Isentropic exponent, $\gamma_{E,2s}/\gamma_{E,1}$.
Figure 3.- Continued.

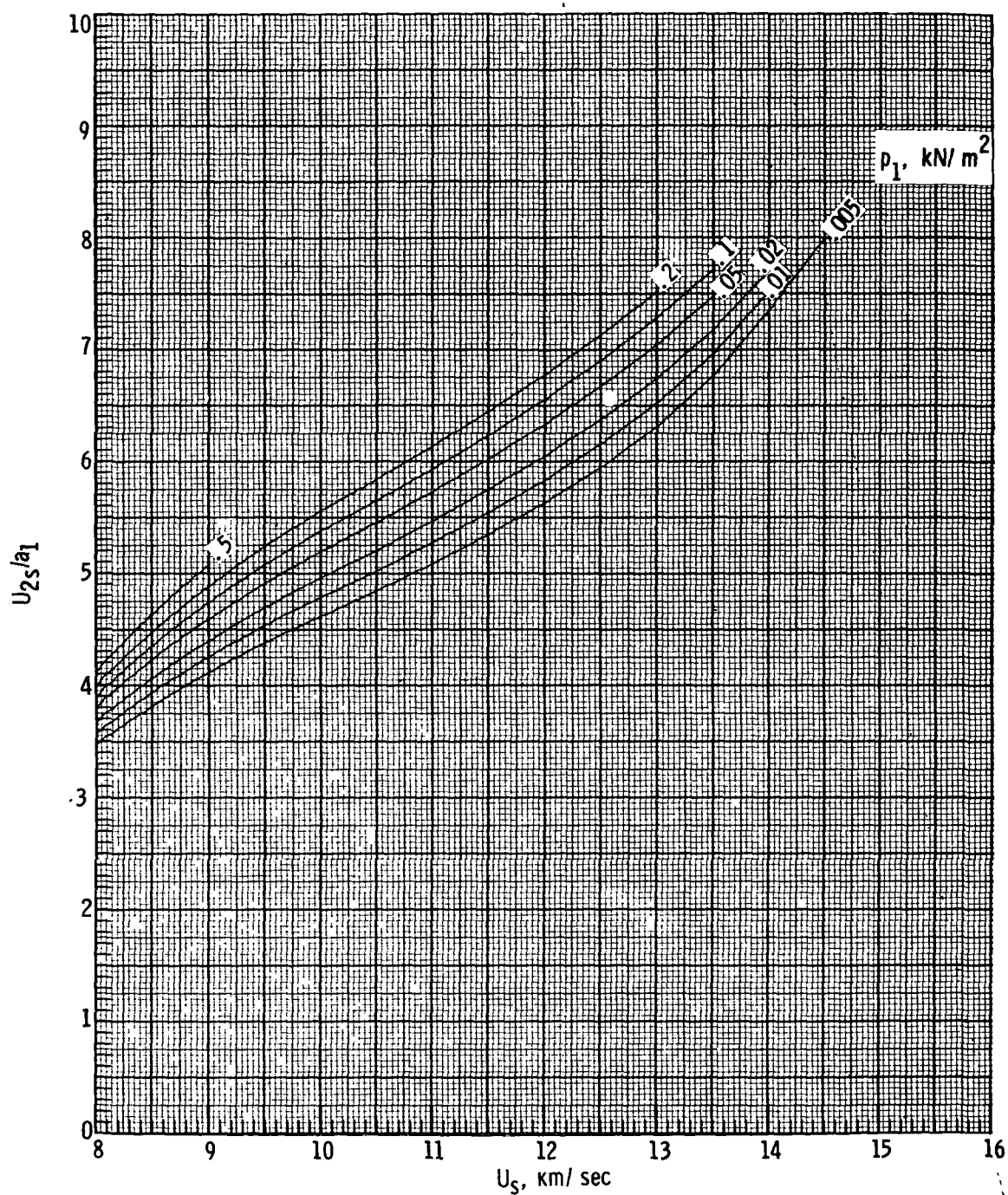


(h) Concluded.

Figure 3.- Continued.

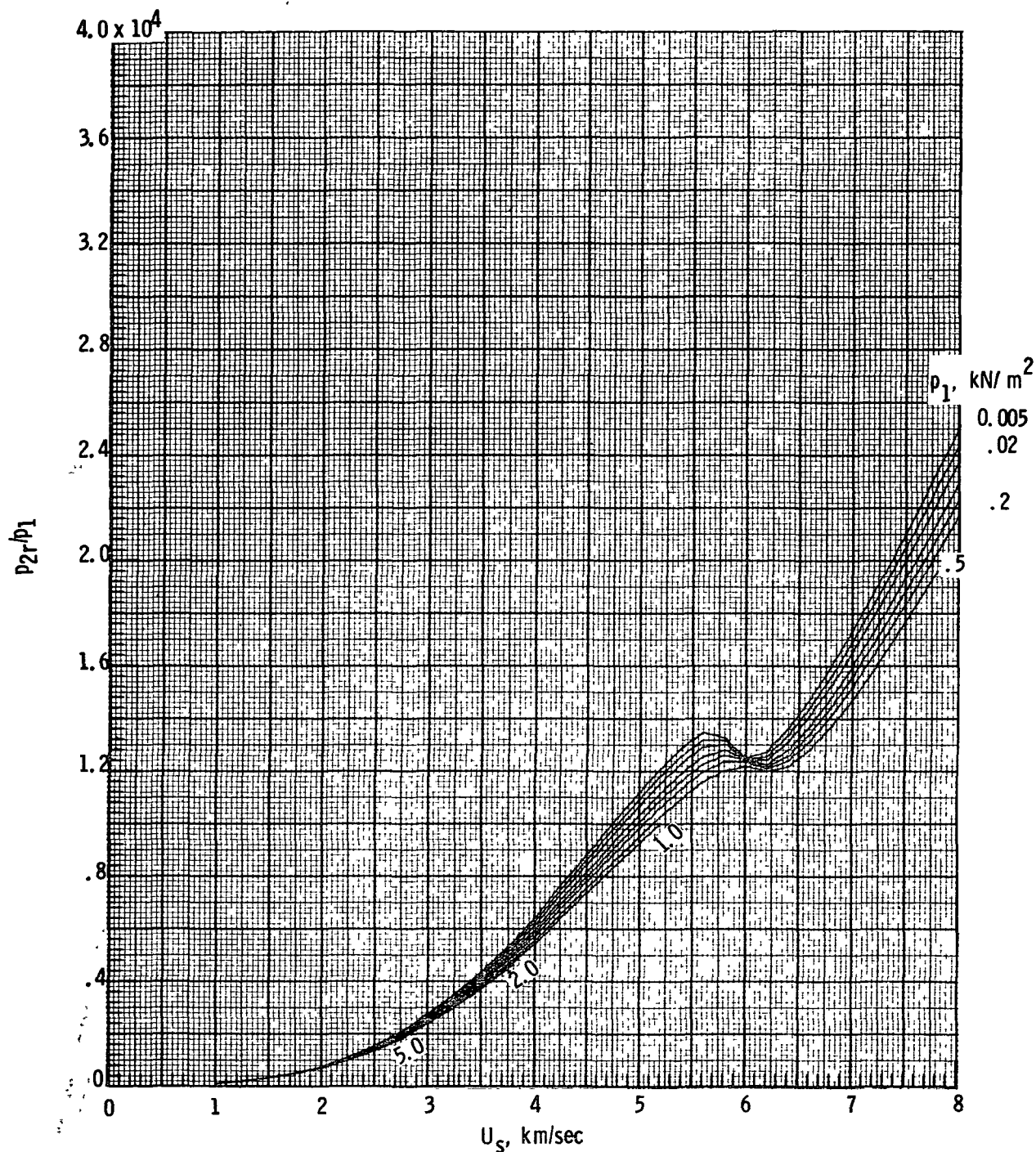


(i) Velocity, U_{2s}/a_1 .
Figure 3.- Continued.



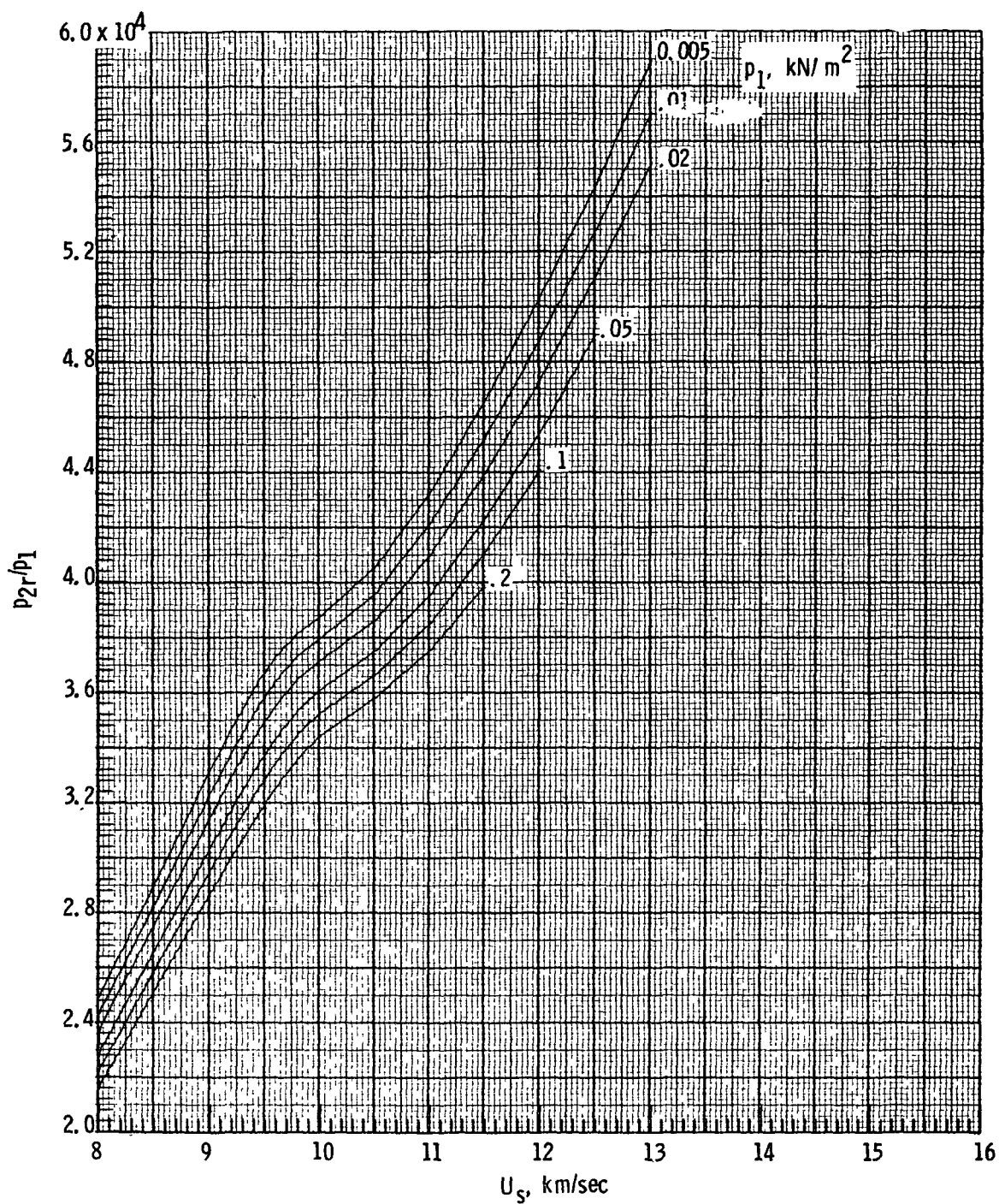
(i) Concluded.

Figure 3.- Concluded.



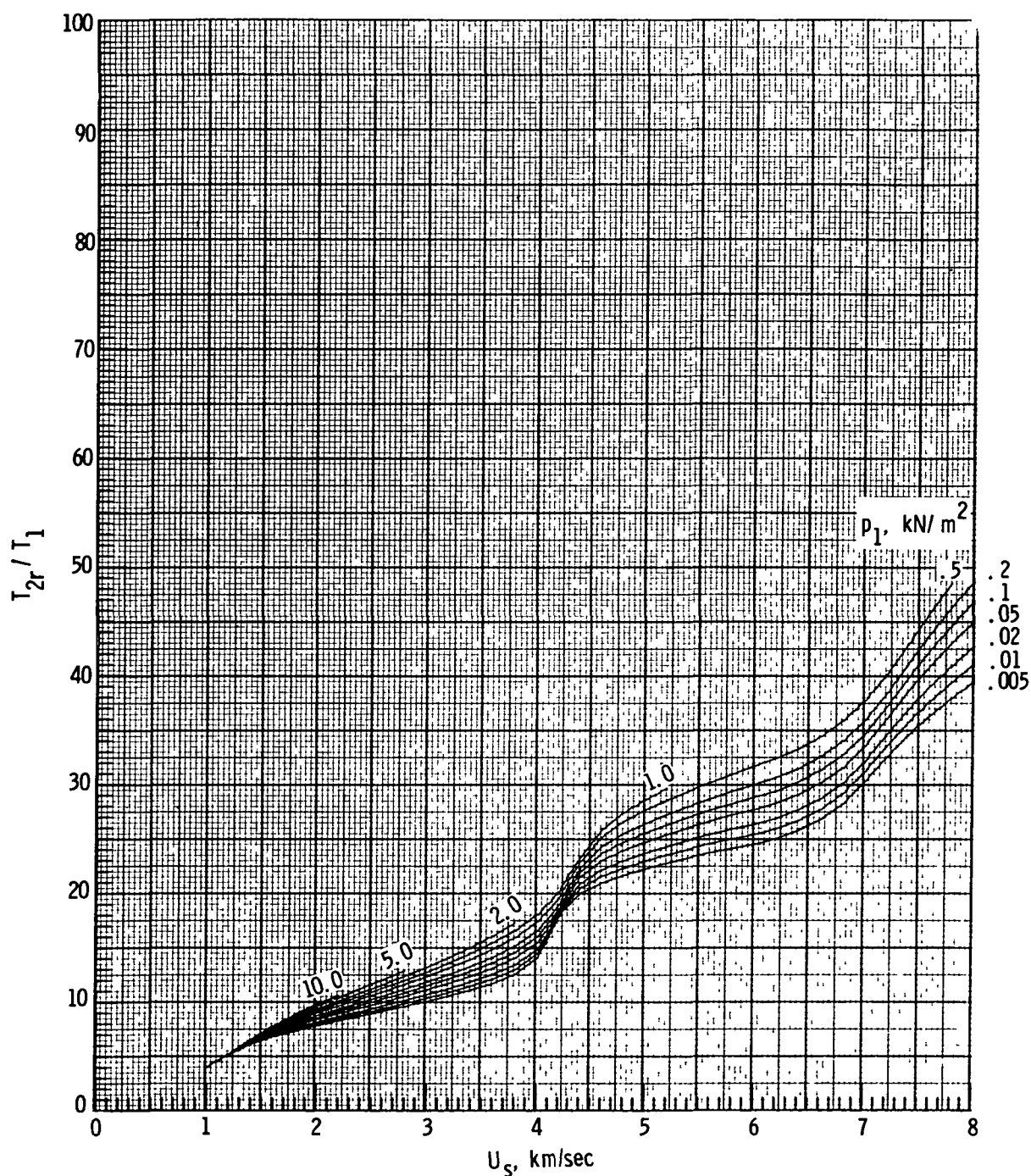
(a) Pressure, p_{2r}/p_1 .

Figure 4.- Thermodynamic properties behind a reflected normal shock and reflected shock velocity for pure CO_2 .

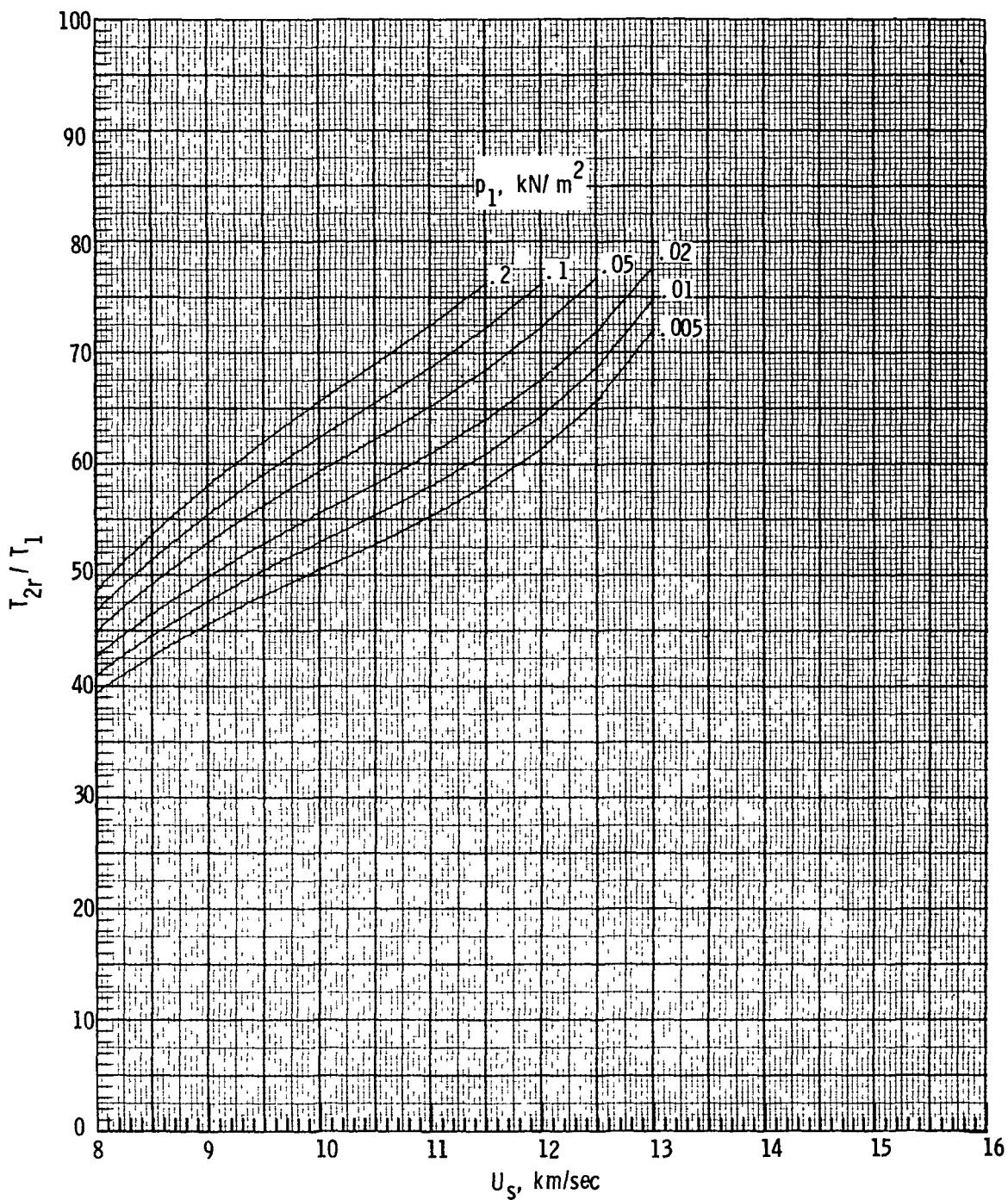


(a) Concluded.

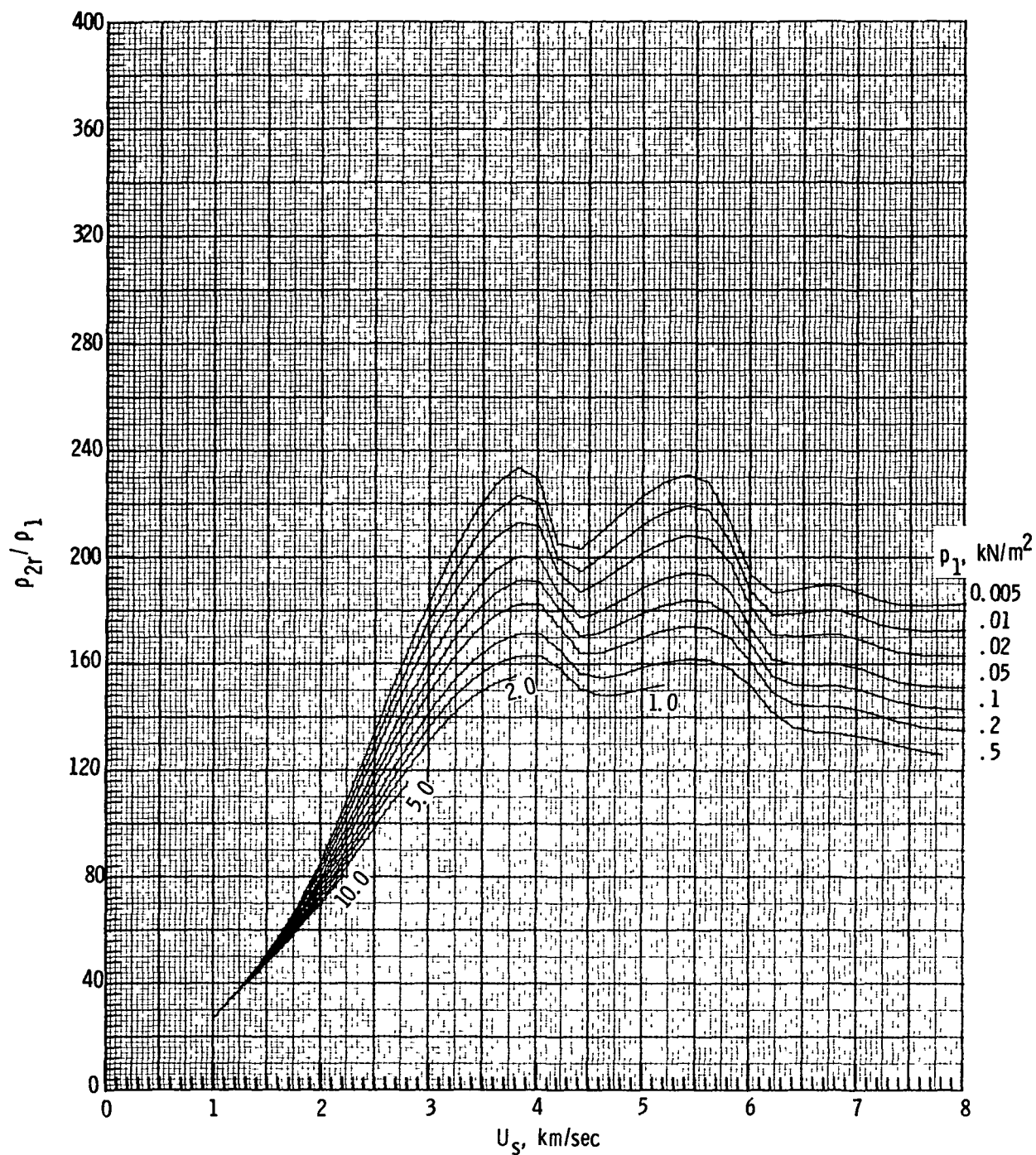
Figure 4.- Continued.



(b) Temperature, T_{2r}/T_1 .
Figure 4.- Continued.

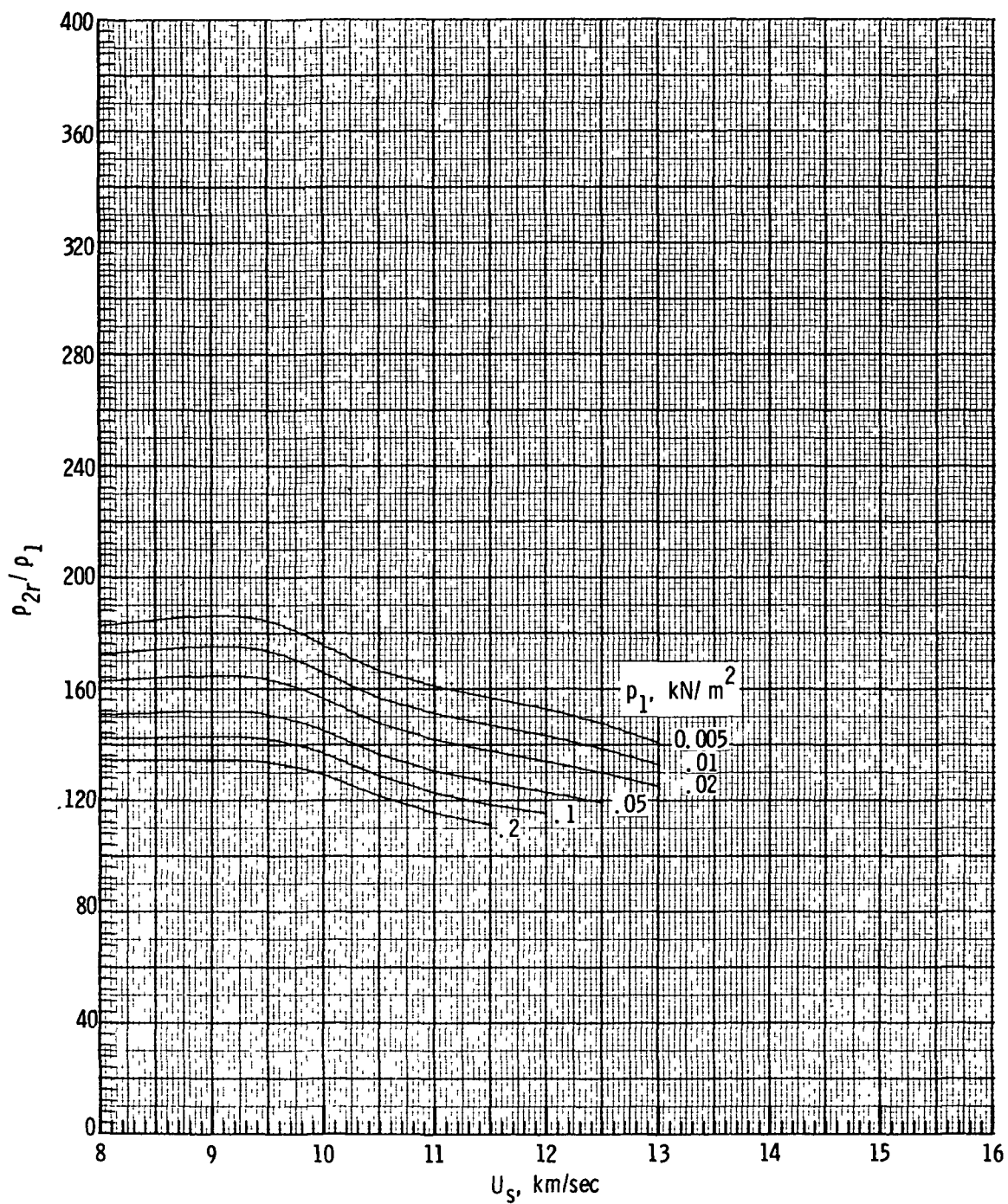


(b) Concluded.
Figure 4.- Continued.

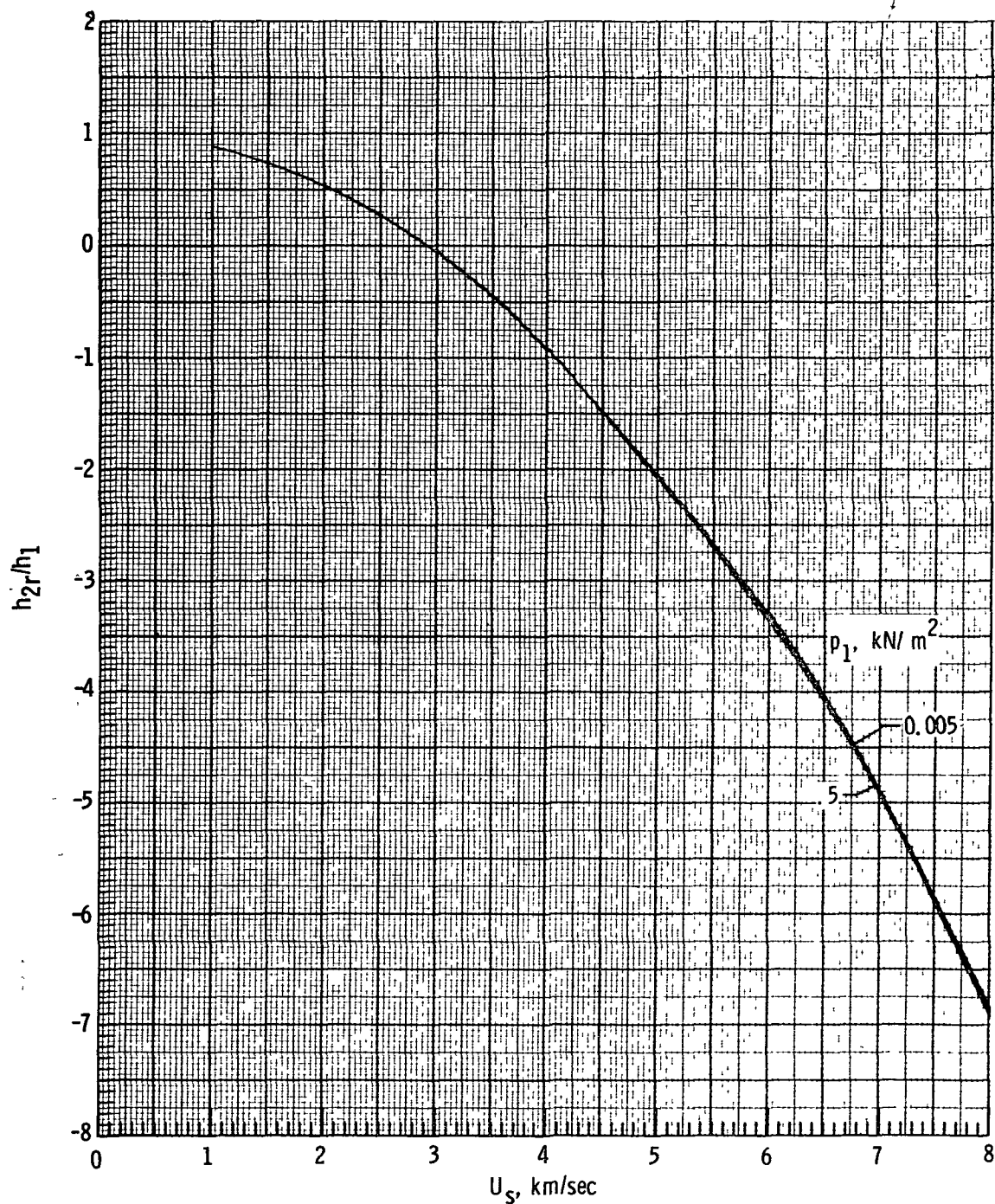


(c) Density ratio, ρ_{2r}/ρ_1 .

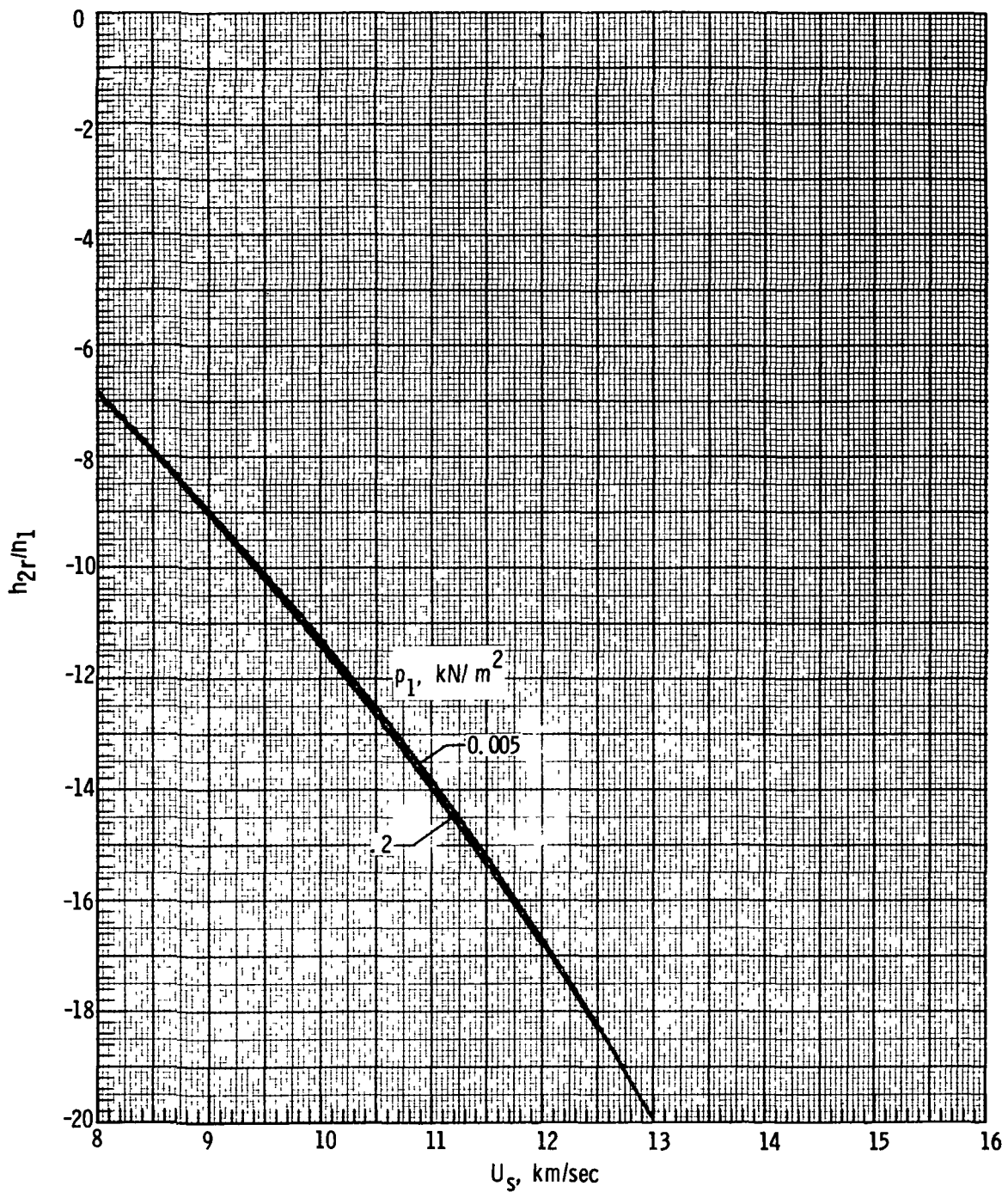
Figure 4.- Continued.



(c) Concluded.
Figure 4.- Continued.

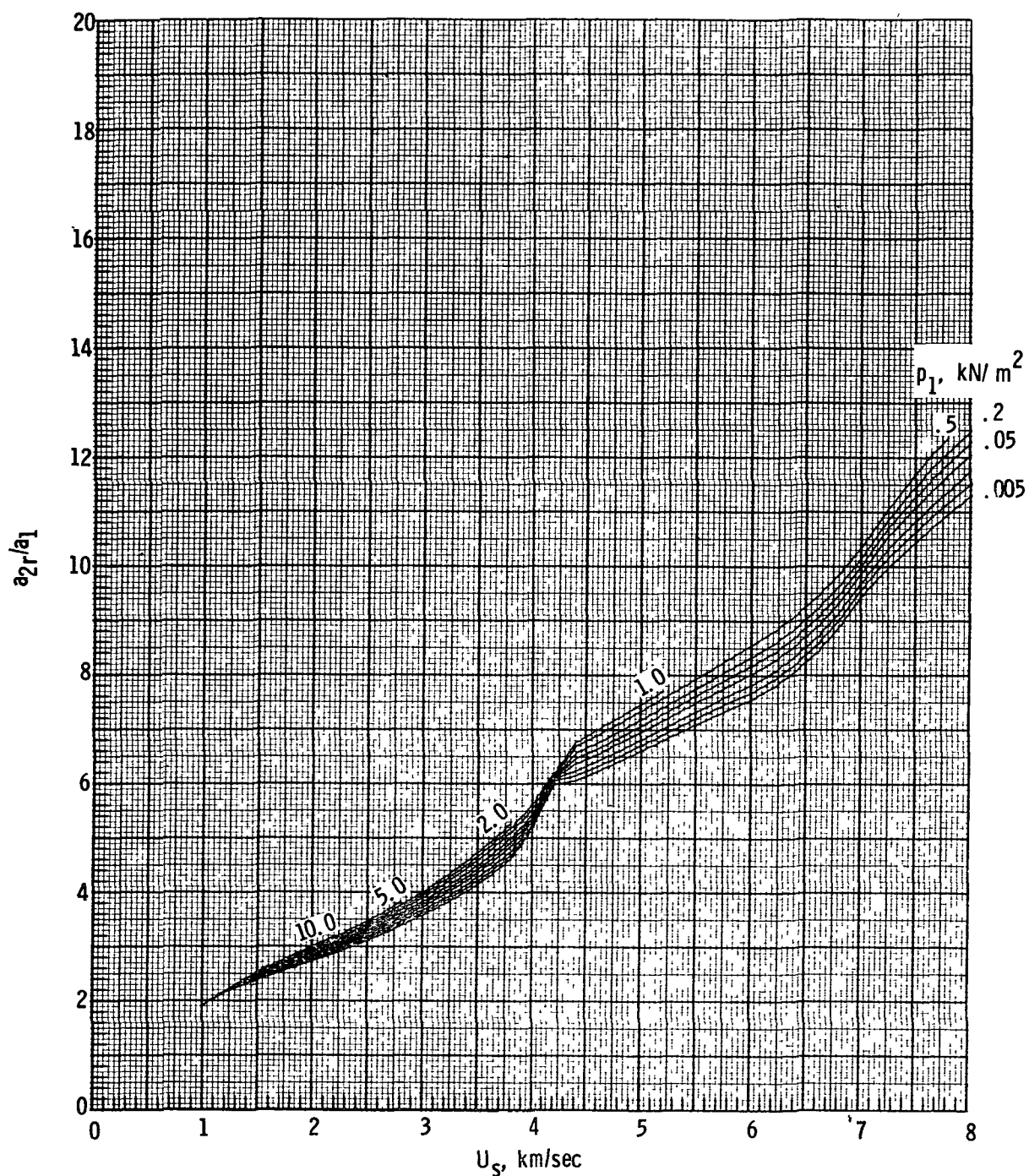


(d) Enthalpy, h_{2r}/h_1 .
Figure 4.- Continued.



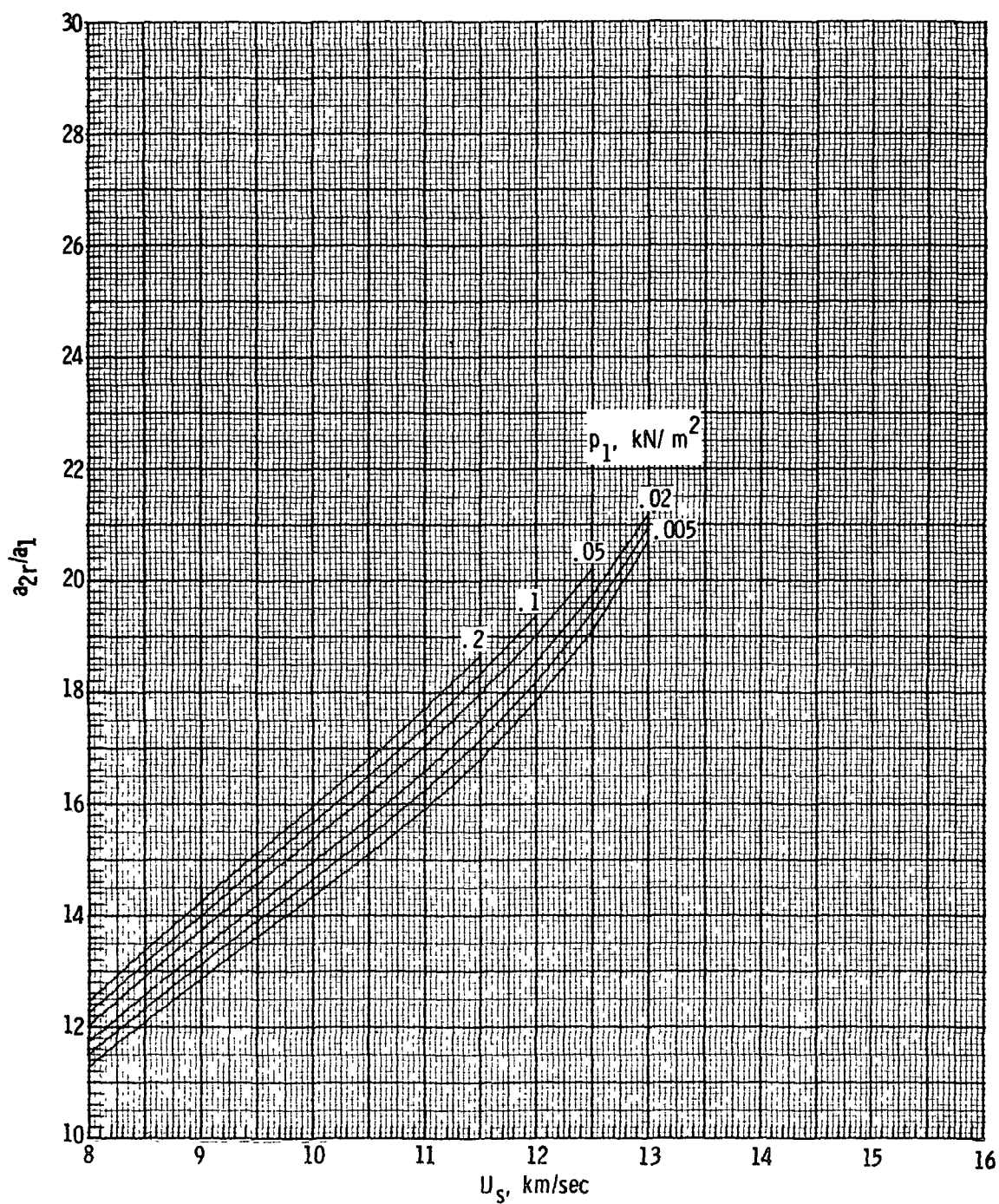
(d) Concluded.

Figure 4.- Continued.



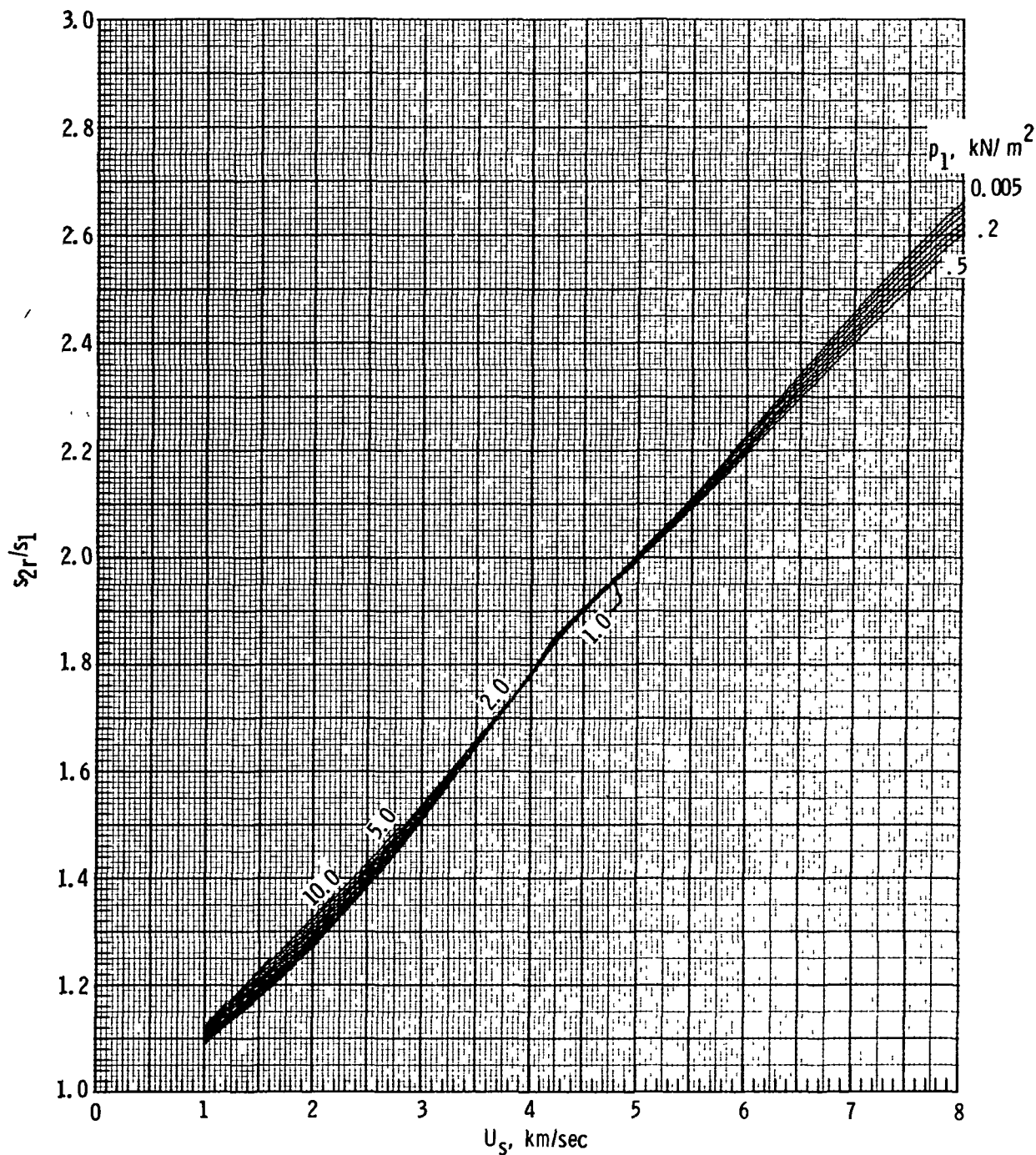
(e) Speed of sound, a_{2r}/a_1 .

Figure 4.- Continued.

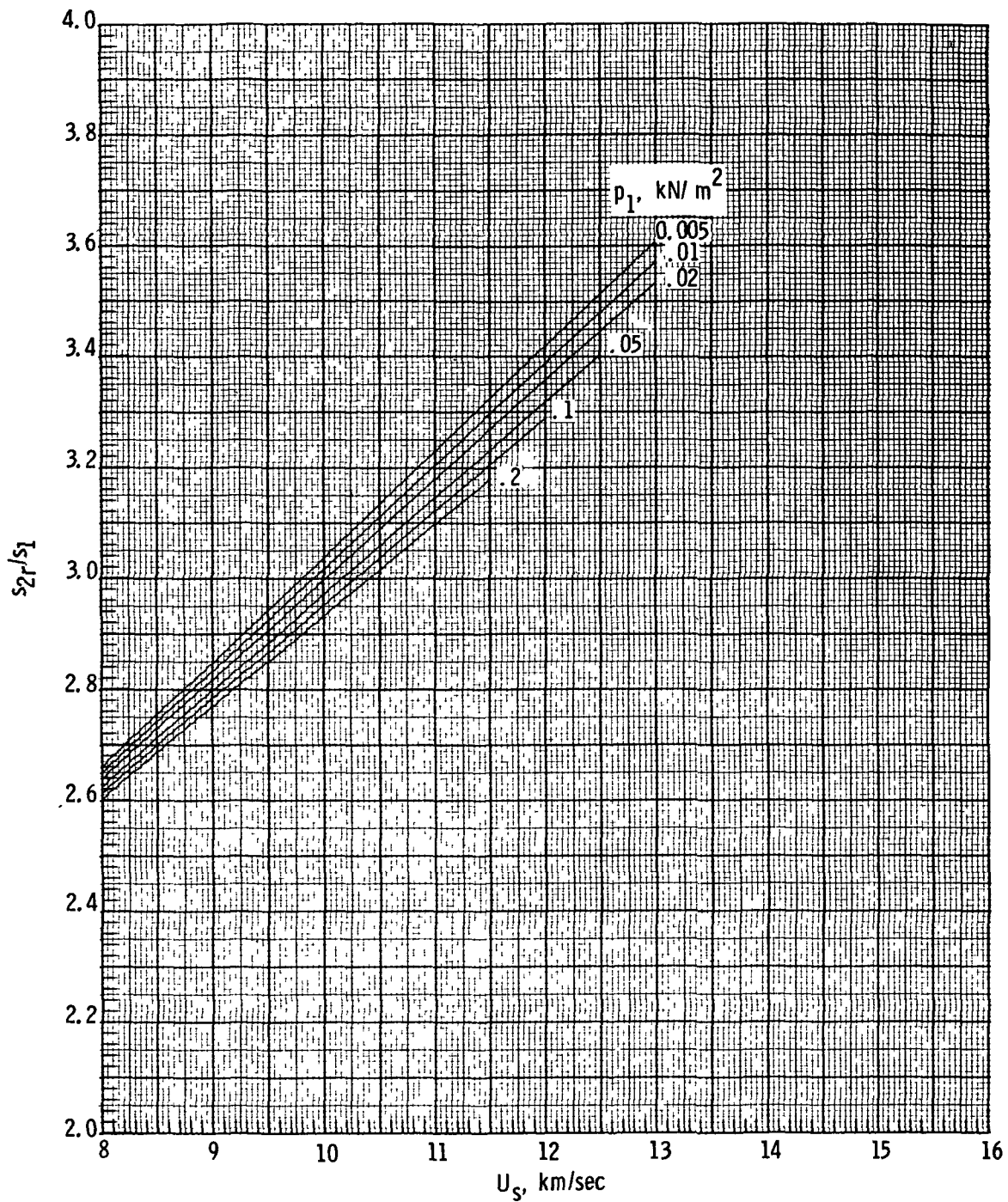


(e) Concluded.

Figure 4.- Continued.

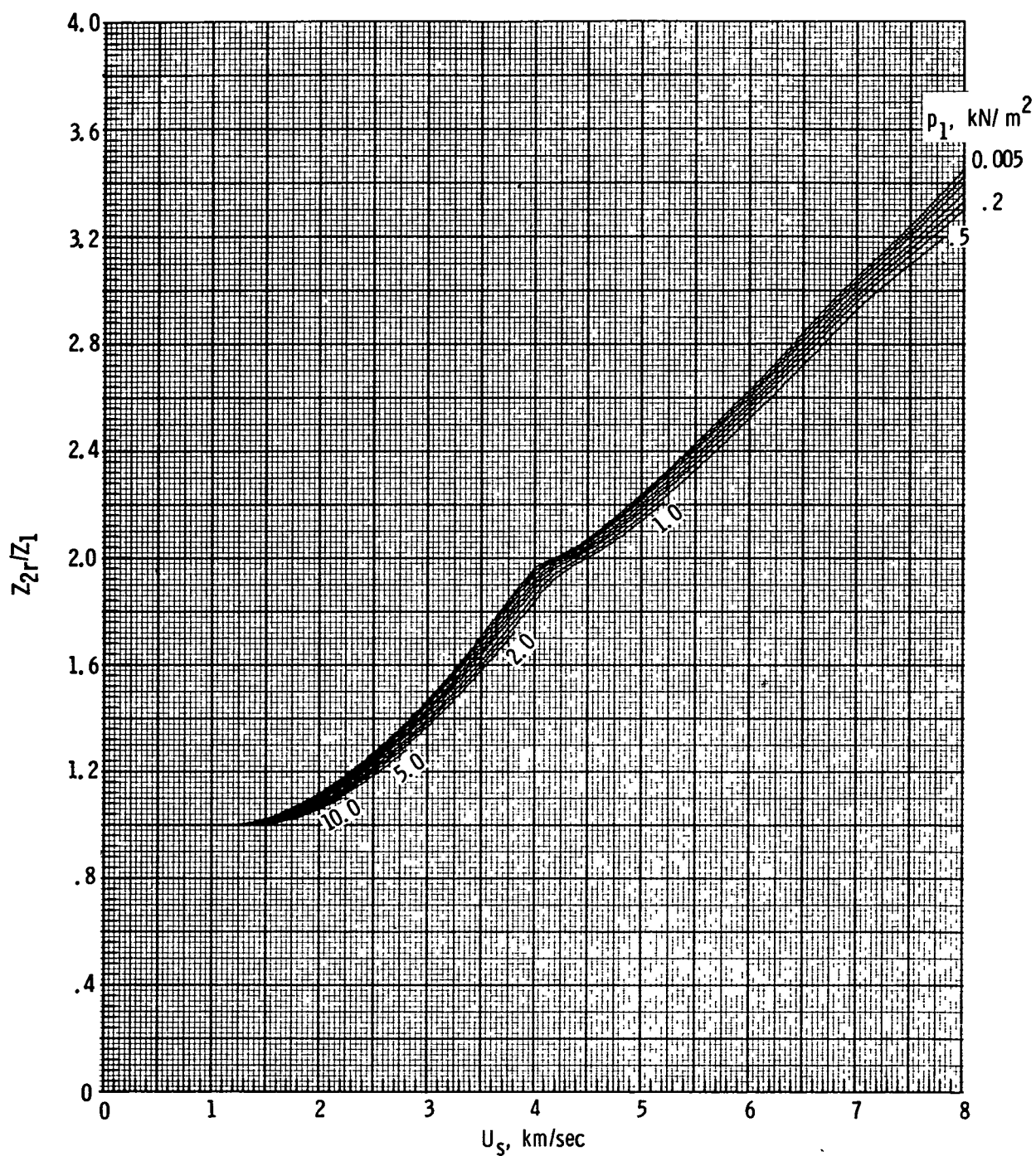


(f) Entropy, s_{2r}/s_1 .
Figure 4.- Continued.



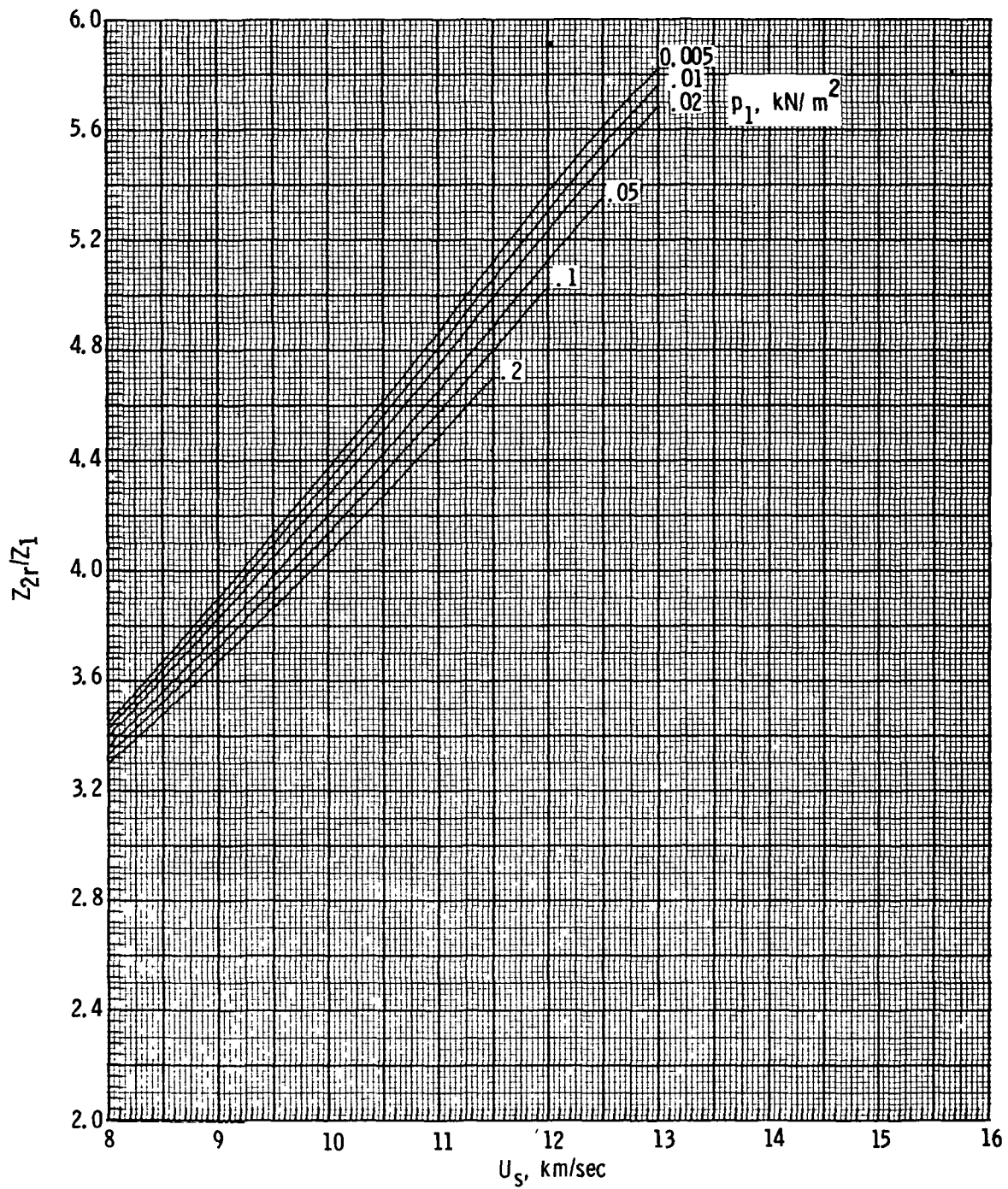
(f) Concluded.

Figure 4.- Continued.



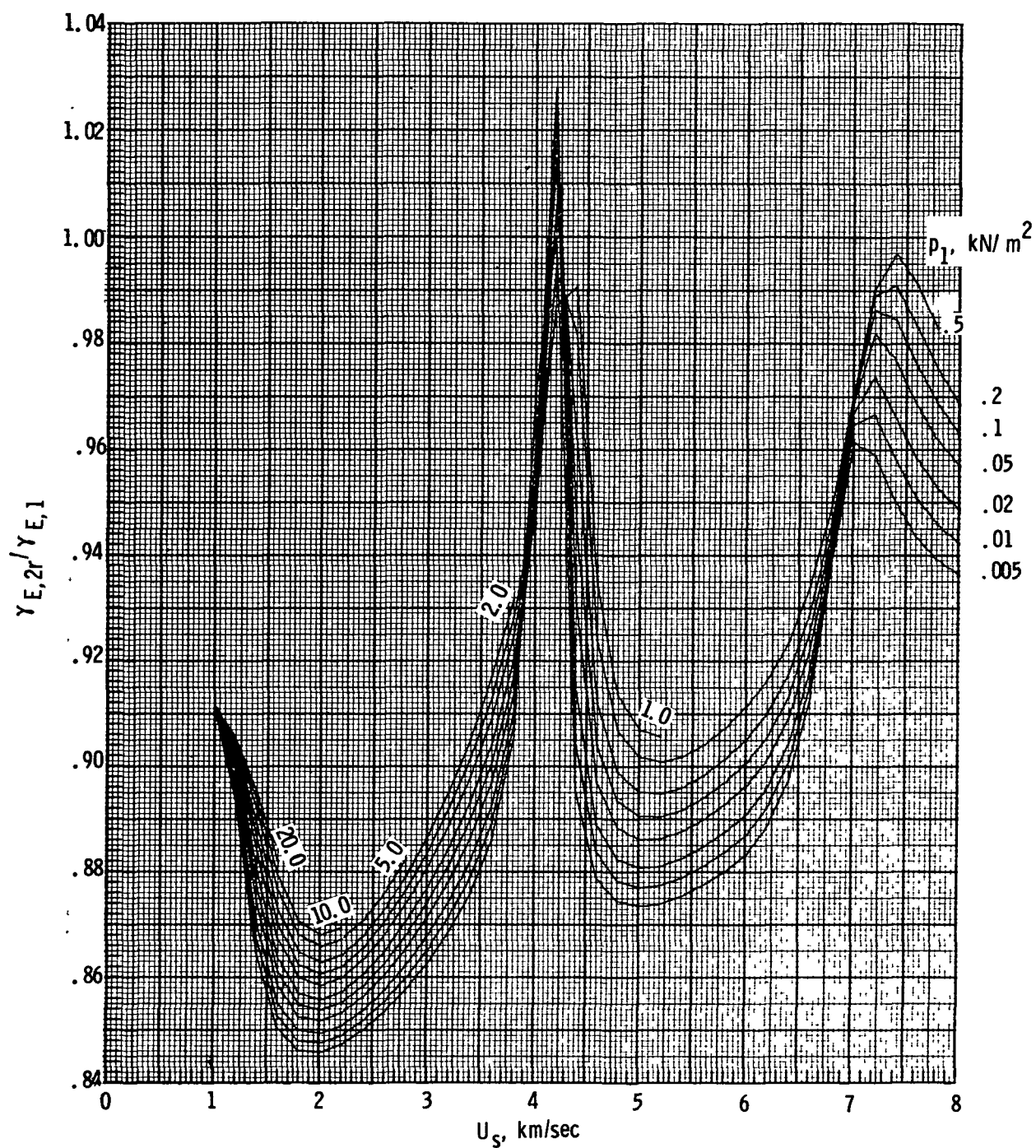
(g) Molecular weight ratio, Z_{2r}/Z_1 .

Figure 4.- Continued.

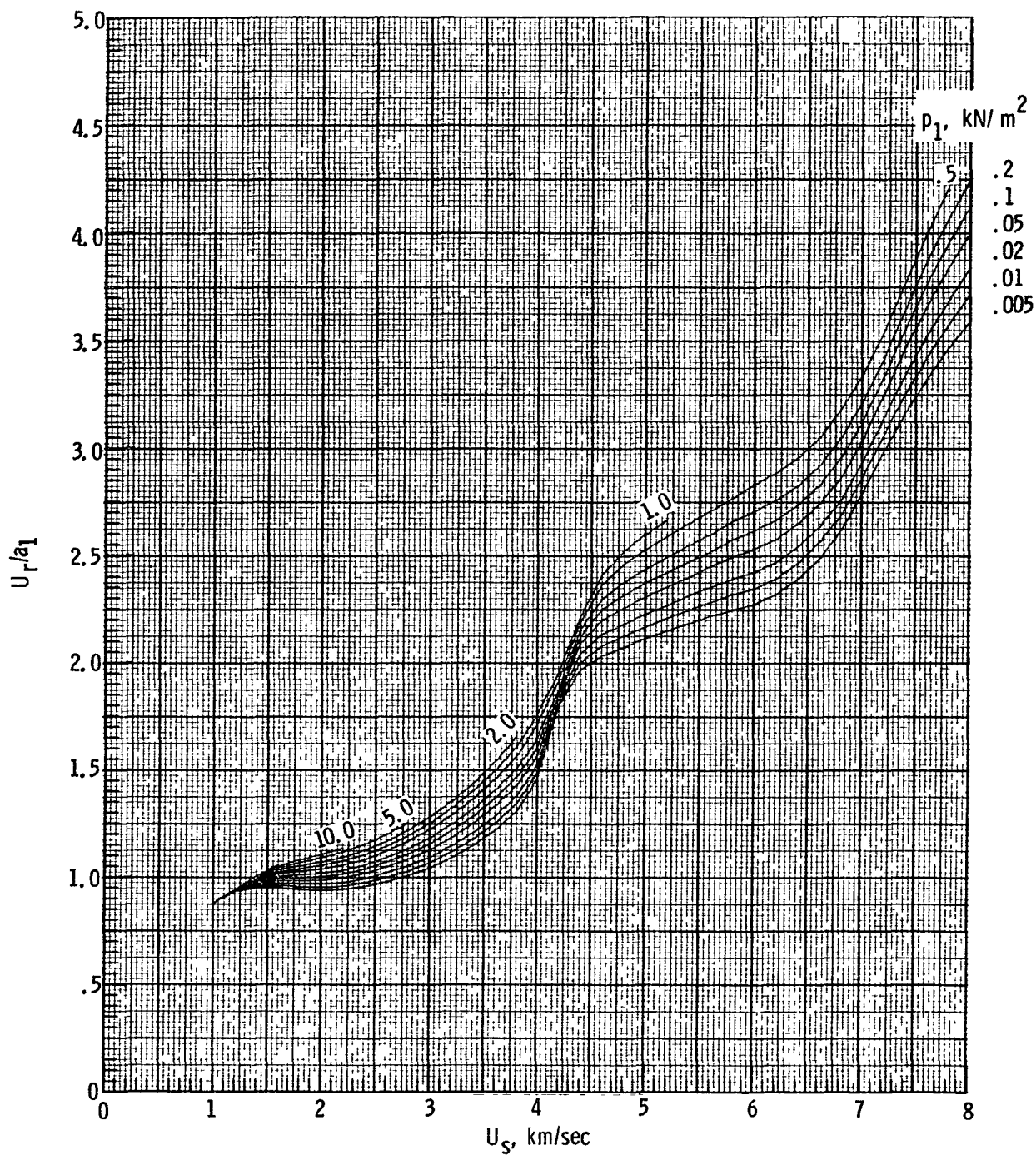


(g) Concluded.

Figure 4.- Continued.

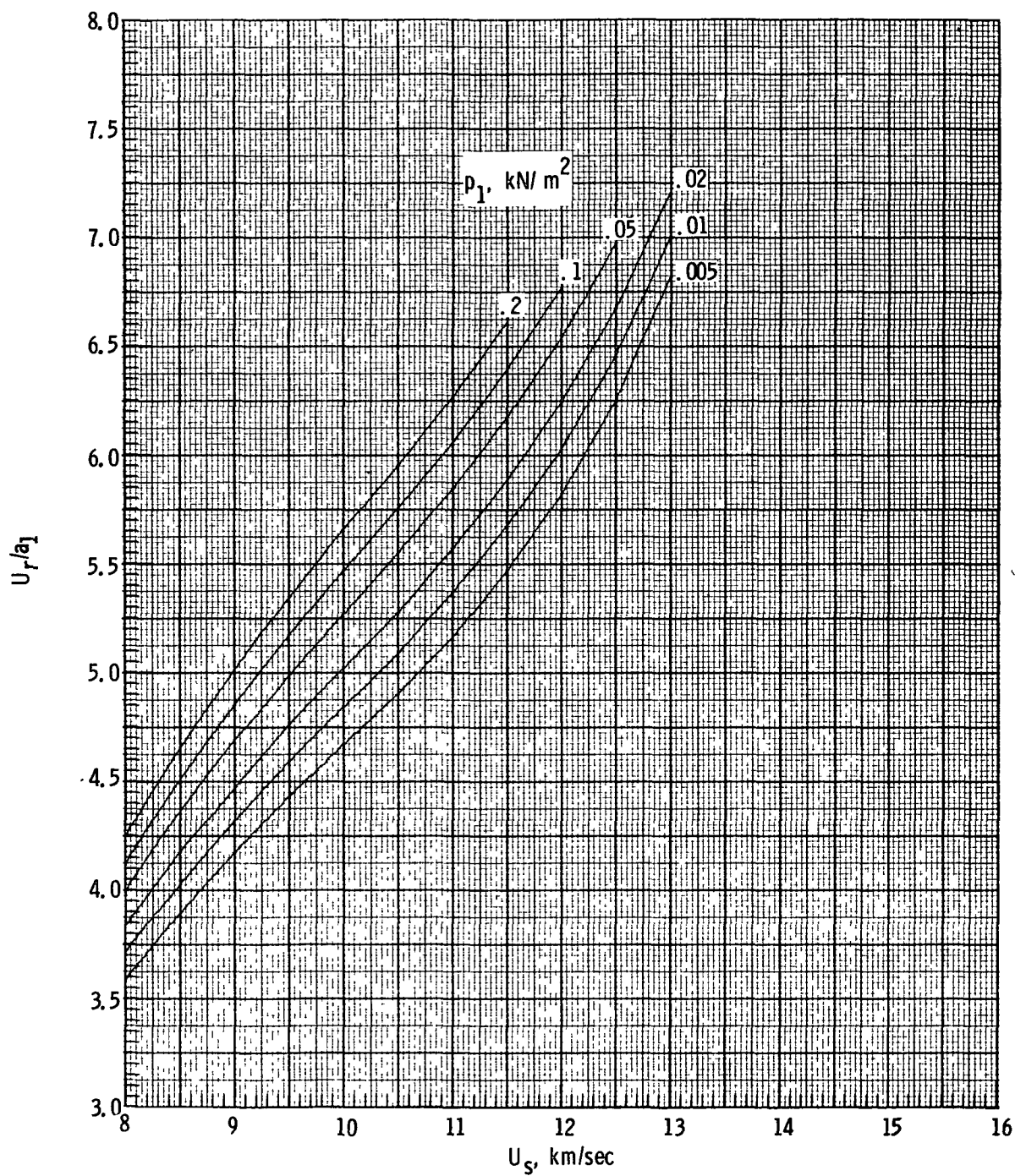


(h) Isentropic exponent, $\gamma_{E,2r}/\gamma_{E,1}$.
Figure 4.- Continued.



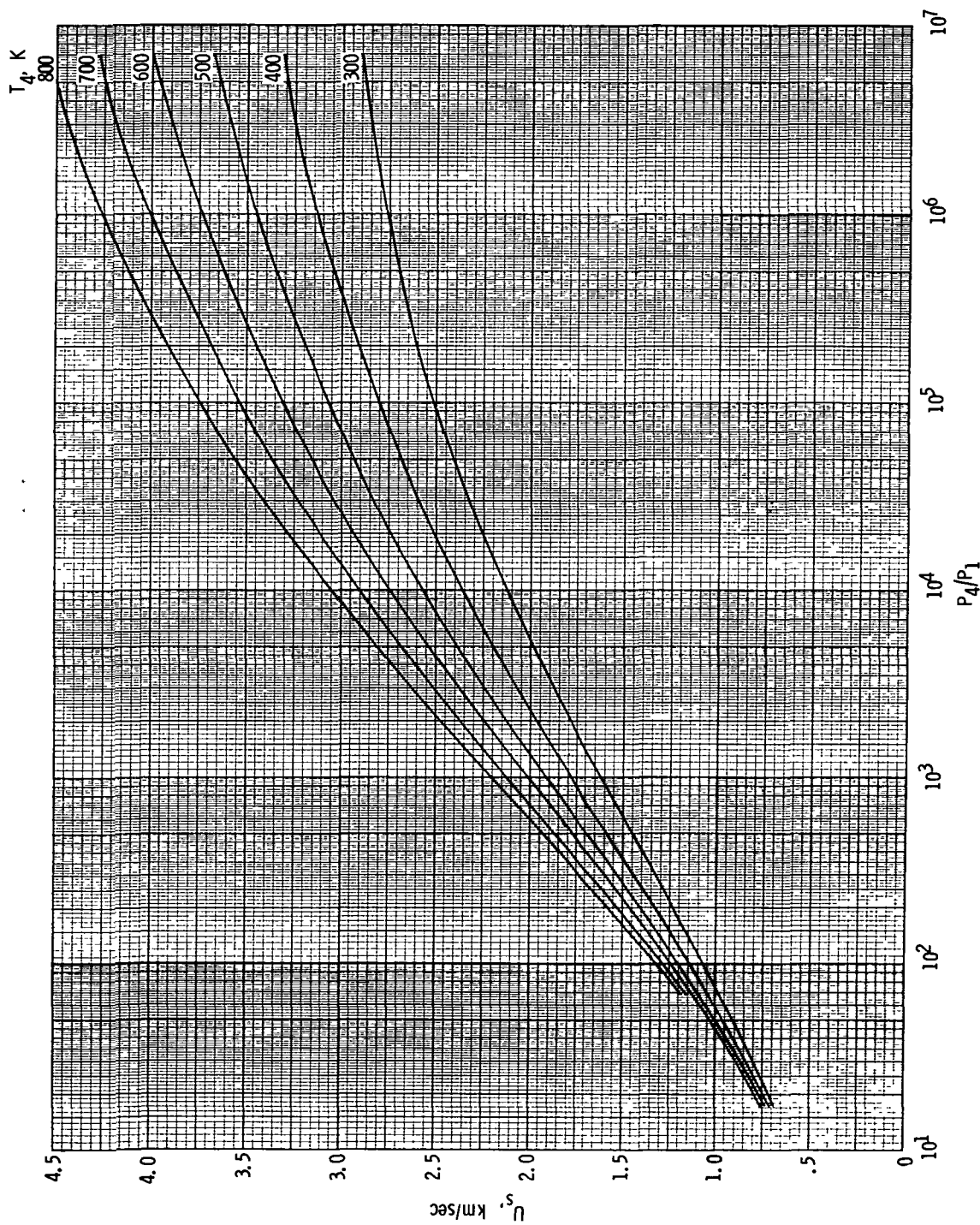
(i) Reflected shock velocity, U_r/a_1 .

Figure 4.- Continued.



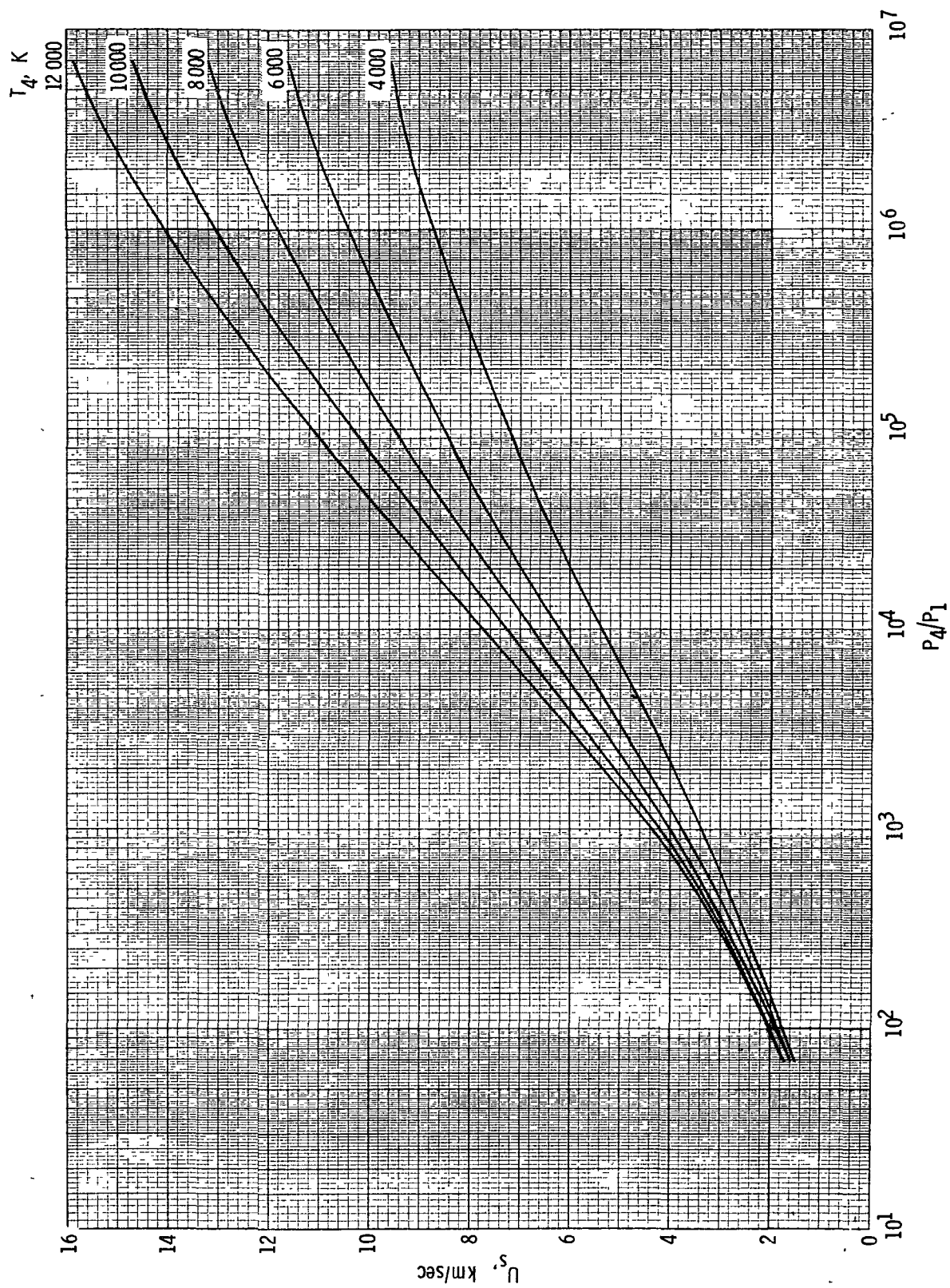
(i) Concluded.

Figure 4.- Concluded.



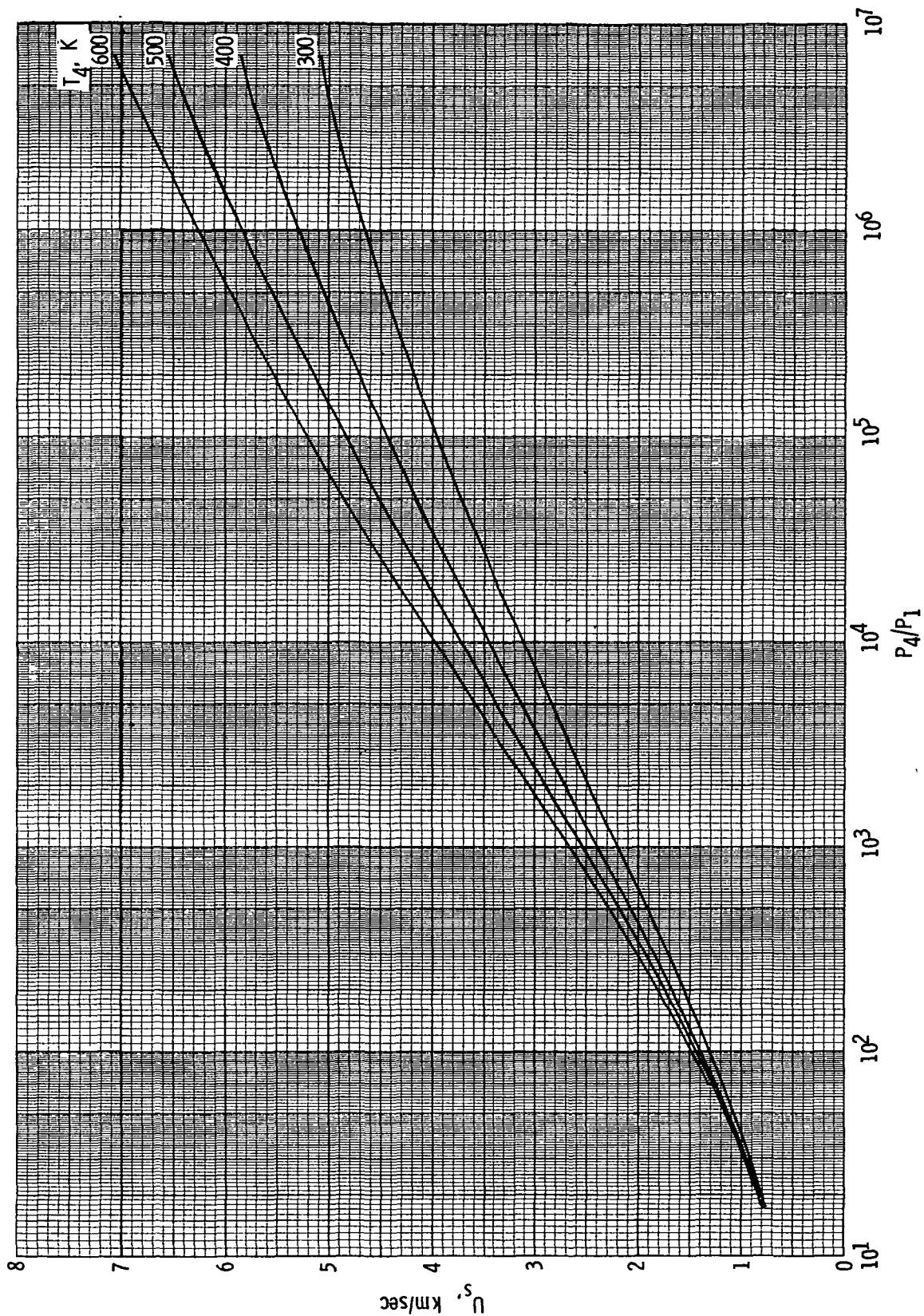
(a) Helium driver gas. $300 \text{ K} \leq T_4 \leq 800 \text{ K}$.

Figure 5.- Incident shock velocity as a function of ratio of driver gas pressure to CO_2 test gas pressure for helium and hydrogen driver gases. $p_4 = 68.95 \text{ MN/m}^2$.



(b) Helium driver gas. $4000 K \leq T_4 \leq 12\,000 K$.

Figure 5.- Continued.



(c) Hydrogen driver gas.
Figure 5.- Concluded.



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—NATIONAL AERONAUTICS AND SPACE ACT OF 1958

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